SEQUENCE LISTING

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Jocelyn E. MALAMY
Leonard PYSH
Yrjo HELARIUTTA
Jun LIM

<120> Scarecrow Gene, Promoter and Uses Thereof

<130> 5914-066-999

<140> 09/265,585
<141> 1999-03-10

<150> 08/842,445
<151> 1997-04-24

Sub C1

<150> 08/638,617
<151> 1996-04-26

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35 40 45

Ala Ser Glu Met Ser Ser Asn Pro Asp Tyr Asn Asn Ser Ser Arg Pro
50 55 60

Pro Arg Arg Val Ser His Leu Leu Asp Ser Asn Tyr Asn Thr Val Thr
65 70 75 80

Pro Gln Gln Pro Pro Ser Leu Thr Ala Ala Ala Thr Val Ser Ser Gln
85 90 95

Pro Asn Pro Pro Leu Ser Val Cys Gly Phe Ser Gly Leu Pro Val Phe
100 105 110

Pro Ser Asp Arg Gly Gly Arg Asn Val Met Met Ser Val Gln Pro Met
115 120 125

Asp Gln Asp Ser Ser Ser Ser Ser Ala Ser Pro Thr Val Trp Val Asp
130 135 140

Ala Ile Ile Arg Asp Leu Ile His Ser Ser Thr Ser Val Ser Ile Pro
145 150 155 160

Gln Leu Ile Gln Asn Val Arg Asp Ile Ile Phe Pro Cys Asn Pro Asn
165 170 175

Leu Gly Ala Leu Leu Glu Tyr Arg Leu Arg Ser Leu Met Leu Leu Asp
180 185 190

Pro Ser Ser Ser Ser Asp Pro Ser Pro Gln Thr Phe Glu Pro Leu Tyr
195 200 205

Gln Ile Ser Asn Asn Pro Ser Pro Pro Gln Gln Gln Gln His Gln
210 215 220

Gln Gln Gln Gln Gln His Lys Pro Pro Pro Pro Pro Ile Gln Gln Gln
225 230 235 240

Glu Arg Glu Asn Ser Ser Thr Asp Ala Pro Pro Gln Pro Glu Thr Val
245 250 255

Thr Ala Thr Val Pro Ala Val Gln Thr Asn Thr Ala Glu Ala Leu Arg
260 265 270

Glu Arg Lys Glu Glu Ile Lys Arg Gln Lys Gln Asp Glu Glu Gly Leu
275 280 285

His Leu Leu Thr Leu Leu Leu Gln Cys Ala Glu Ala Val Ser Ala Asp
290 295 300

Asn Leu Glu Glu Ala Asn Lys Leu Leu Leu Glu Ile Ser Gln Leu Ser
305 310 315 320

Thr Pro Tyr Gly Thr Ser Ala Gln Arg Val Ala Ala Tyr Phe Ser Glu
325 330 335

Ala Met Ser Ala Arg Leu Leu Asn Ser Cys Leu Gly Ile Tyr Ala Ala
340 345 350

Leu Pro Ser Arg Trp Met Pro Gln Thr His Ser Leu Lys Met Val Ser
355 360 365

Ala Phe Gln Val Phe Asn Gly Ile Ser Pro Leu Val Lys Phe Ser His
370 375 380

Phe Thr Ala Asn Gln Ala Ile Gln Glu Ala Phe Glu Lys Glu Asp Ser
385 390 395 400

Val His Ile Ile Asp Leu Asp Ile Met Gln Gly Leu Gln Trp Pro Gly
405 410 415

Leu Phe His Ile Leu Ala Ser Arg Pro Gly Gly Pro Pro His Val Arg
420 425 430

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435 440 445

Arg Leu Ser Asp Phe Thr Asp Lys Leu Gly Leu Pro Phe Glu Phe Cys
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Pro Leu Ala Glu Lys Val Gly Asn Leu Asp Thr Glu Arg Leu Asn Val
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Arg Lys Arg Glu Ala Val Ala Val His Trp Leu Gln His Ser Leu Tyr
485 490 495

Asp Val Thr Gly Ser Asp Ala His Thr Leu Trp Leu Leu Gln Arg Leu
500 505 510

Ala Pro Lys Val Val Thr Val Val Glu Gln Asp Leu Ser His Ala Gly
515 520 525

Ser Phe Leu Gly Arg Phe Val Glu Ala Ile His Tyr Tyr Ser Ala Leu
530 535 540

Phe Asp Ser Leu Gly Ala Ser Tyr Gly Glu Glu Ser Glu Glu Arg His
545 550 555 560

Val Val Glu Gln Gln Leu Leu Ser Lys Glu Ile Arg Asn Val Leu Ala
565 570 575

Val Gly Gly Pro Ser Arg Ser Gly Glu Val Lys Phe Glu Ser Trp Arg
580 585 590

Glu Lys Met Gln Gln Cys Gly Phe Lys Gly Ile Ser Leu Ala Gly Asn
595 600 605

Ala Ala Thr Gln Ala Thr Leu Leu Leu Gly Met Phe Pro Ser Asp Gly
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Tyr Thr Leu Val Asp Asp Asn Gly Thr Leu Lys Leu Gly Trp Lys Asp

625 630 635 640

Leu Ser Leu Leu Thr Ala Ser Ala Trp Thr Pro Arg Ser
645 650

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Pro Ala Val Gln Thr Asn Thr Ala Glu Ala Leu Arg Glu Arg Lys Glu
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Glu Ile Lys Arg Gln Lys Gln
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<210> 4
<211> 23
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<213> Saccharomyces cerevisiae

<400> 4

Leu Lys Arg Ala Arg Asn Thr Glu Ala Ala Arg Arg Ser Arg Ala Arg
1 5 10 15

Lys Leu Gln Arg Met Lys Gln
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Arg Arg Leu Ala Gln Asn Arg Glu Ala Ala Arg Lys Ser Arg Leu Arg
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Lys Lys Ala Tyr Val Gln Gln
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Ile Arg Arg Glu Arg Asn Lys Met Ala Ala Ala Lys Cys Arg Asn Arg
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Arg Arg Glu Leu Thr Asp Thr

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<211> 23
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<213> Homo sapiens

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Arg Lys Arg Met Arg Asn Arg Ile Ala Ala Ser Lys Cys Arg Lys Arg
1 5 10 15

Lys Leu Glu Arg Ile Ala Arg
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<210> 8
<211> 23
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<213> Homo sapiens

<400> 8

Val Arg Leu Met Lys Asn Arg Glu Ala Ala Arg Glu Cys Arg Arg Lys
1 5 10 15

Lys Lys Glu Tyr Val Lys Cys
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<211> 23
<212> PRT
<213> Zea mays

<400> 9

Lys Arg Lys Glu Ser Asn Arg Glu Ser Ala Arg Arg Ser Arg Tyr Arg
1 5 10 15

Lys Ala Ala His Leu Lys Glu
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<210> 10
<211> 23
<212> PRT
<213> Zea mays

<400> 10

Met Arg Gln Ile Arg Asn Arg Asp Ser Ala Met Lys Ser Arg Glu Arg
1 5 10 15

Lys Lys Ser Tyr Ile Lys Asp
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<210> 11

<211> 23
<212> PRT
<213> Oryza sativa

<400> 11

Arg Arg Met Val Ser Asn Arg Glu Ser Ala Arg Arg Ser Arg Lys Lys
1 5 10 15

Lys Gln Ala His Leu Ala Asp
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<210> 12
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<212> PRT
<213> Arabidopsis thaliana

<400> 12

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Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala Ser Arg Pro
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Gly Gly Pro Pro His Val Arg Leu Thr Gly Leu
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<211> 43
<212> PRT
<213> Arabidopsis thaliana

<400> 13

Ala Val Lys Asn Glu Ser Phe Val His Ile Ile Asp Phe Gln Ile Ser
1 5 10 15

Gln Gly Gly Gln Trp Val Ser Leu Ile Arg Ala Leu Gly Ala Arg Pro
20 25 30

Gly Gly Pro Pro Asn Val Arg Ile Thr Gly Ile
35 40

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<211> 43
<212> PRT
<213> Arabidopsis thaliana

<400> 14

Ala Met Glu Gly Glu Lys Met Val His Val Ile Asp Leu Asp Ala Ser
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Glu Pro Ala Gln Trp Leu Ala Leu Leu Gln Ala Phe Asn Ser Arg Pro

20 25 30

Glu Gly Pro Pro His Leu Arg Ile Thr Gly Val
35 40

<210> 15
<211> 29
<212> PRT
<213> Arabidopsis thaliana

<400> 15

Ala Ile Lys Gly Glu Glu Glu Val His Ile Ile Asp Phe Asp Ile Asn
1 5 10 15

Gln Gly Asn Gln Tyr Met Thr Leu Ile Arg Ser Ile Ala
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<210> 16
<211> 26
<212> PRT
<213> Oryza sativa

<220>
<221> SITE
<222> 7
<223> Xaa=unknown amino acid

<400> 16

Ile His Val Ile Asp Phe Xaa Leu Gly Val Gly Gly Gln Trp Ala Ser
1 5 10 15

Phe Leu Gln Glu Leu Ala His Arg Arg Gly
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<212> PRT
<213> Zea mays

<220>
<221> SITE
<222> 1...36
<223> Xaa=unknown amino acid

<400> 17

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Leu Met Asp Val Phe Ser Ala Arg Lys Gly Gly Pro Pro Lys Leu Arg
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Ile Thr Gly Ile

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<213> Arabidopsis thaliana

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<222> 1...1085
<223> n=a, c, g, or t

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gaaagttttg tgcacattat cgatttccag atttctcaag gtggtcaatg ggtgagtttg 180

atccgtgctc ttggtgctag acctggtgga cctccgaacg ttaggataac gggaattgat 240

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<213> Arabidopsis thaliana

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Ala Ile Ala Glu Ala Val Lys Asn Glu Ser Phe Val His Ile Ile Asp
        35                  40                  45

Phe Gln Ile Ser Gln Gly Gly Gln Trp Val Ser Leu Ile Arg Ala Leu
    50                  55                  60

Gly Ala Arg Pro Gly Gly Pro Pro Asn Val Arg Ile Thr Gly Ile Asp
65                  70                  75                  80

Asp Pro Arg Ser Ser Phe Ala Arg Gln Gly Gly Leu Glu Leu Val Gly
                85                  90                  95

Gln Arg Leu Gly Lys Leu Ala Glu Met Cys Gly Val Pro Phe Glu Phe
            100                 105                 110


His Gly Ala Ala Leu Phe Cys Thr Glu Val Glu Ile Glu Lys Leu Gly
        115                 120                 125

Val Arg Asn Gly Glu Ala Leu Ala Val Asn Phe Pro Leu Val Leu His
    130                 135                 140

His Met Pro Asp Glu Ser Val Thr Val Glu Asn His Arg Asp Arg Leu
145                 150                 155                 160

Leu Arg Leu Val Lys His Leu Ser Pro Asn Val Val Thr Leu Val Glu
                165                 170                 175

Gln Glu Ala Asn Thr Asn Thr Ala Pro Phe Leu Pro Arg Phe Val Glu
            180                 185                 190

Thr Met Asn His Tyr Leu Ala Val Phe Glu Ser Ile Asp Val Lys Leu
        195                 200                 205

Ala Arg Asp His Lys Glu Arg Ile Asn Val Glu Gln His Cys Leu Ala
    210                 215                 220

Arg Glu Val Glu Asn Leu Ile Ala Cys Glu Gly Val Glu Arg Glu Glu
225                 230                 235                 240

Arg His Glu Pro Leu Gly Lys Trp Arg Ser Arg Phe His Met Ala Gly
                245                 250                 255

Phe Lys Pro Tyr Pro Leu Ser Ser Tyr Val Asn Ala Thr Ile Lys Gly
            260                 265                 270

Leu Leu Glu Ser Tyr Ser Glu Lys Tyr Thr Leu Glu Glu Arg Asp Gly
        275                 280                 285
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Trp Arg
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gcagagaaac tcgatatccc gtttcagttt aatcccgttg tgagtaggtt agactgttta 240

aatgtagaac agttgcgggt taaaacagga gaggccttag ccgttagctc ggttcttcaa 300

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gagatcaaga acatcatatc ctgcgaggga tttgagagaa gagaaagaca cgagaagctt 780

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aagataacta atttgatgat cggctcgtgc c 1231

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<213> Arabidopsis thaliana

<400> 21

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20 25 30

Glu Gly Pro Pro His Leu Arg Ile Thr Gly Val His His Gln Lys Glu
35 40 45

Val Leu Glu Gln Met Ala His Arg Leu Ile Glu Glu Ala Glu Lys Leu
50 55 60

Asp Ile Pro Phe Gln Phe Asn Pro Val Val Ser Arg Leu Asp Cys Leu
65 70 75 80

Asn Val Glu Gln Leu Arg Val Lys Thr Gly Glu Ala Leu Ala Val Ser
85 90 95

Ser Val Leu Gln Leu His Thr Phe Leu Ala Ser Asp Asp Asp Leu Met
100 105 110

Arg Lys Asn Cys Ala Leu Arg Phe His Asn Asn Pro Ser Gly Val Asp
115 120 125

Leu Gln Arg Val Leu Met Met Ser His Gly Ser Ala Ala Glu Ala Arg
130 135 140

Glu Asn Asp Met Ser Asn Asn Asn Gly Tyr Ser Pro Ser Gly Asp Ser
145 150 155 160

Ala Ser Ser Leu Pro Leu Pro Ser Ser Gly Arg Thr Asp Ser Phe Leu
165 170 175

Asn Ala Ile Trp Gly Leu Ser Pro Lys Val Met Val Val Thr Glu Gln
180 185 190

Asp Ser Asp His Asn Gly Ser Thr Leu Met Glu Arg Leu Leu Glu Ser
195 200 205

Leu Tyr Thr Tyr Ala Ala Leu Phe Asp Cys Leu Glu Thr Lys Val Pro
210 215 220

Arg Thr Ser Gln Asp Arg Ile Lys Val Glu Lys Met Leu Phe Gly Glu
225 230 235 240

Glu Ile Lys Asn Ile Ile Ser Cys Glu Gly Phe Glu Arg Arg Glu Arg
245 250 255

His Glu Lys Leu Glu Lys Trp Ser Gln Arg Ile Asp Leu Ala Gly Phe
260 265 270

Gly Asn Val Pro Leu Ser Tyr Tyr Ala Met Leu Gln Ala Arg Arg Leu
275 280 285

Leu Gln Gly Cys Gly Phe Asp Gly Tyr Arg Ile Lys Glu Glu Ser Gly
290 295 300

Cys Ala Val Ile Cys Trp Gln Asp Arg Pro Leu Tyr Ser Val Ser Ala
305 310 315 320

Trp Arg Cys Arg Lys
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<213> Arabidopsis thaliana

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tcggtctaag actcgagcaa ctcgcagagg ataatggagt atccttcaaa ttcaaagcaa 480

tgccttcaaa gacttcgatt gtctctccat caacactcgg ttgcaaacca ggagaaacct 540

taatagtgaa ctttgcattc caacttcacc acatgcctga cgagagtgtc acaacagtaa 600

accagcggga cgagctactt cacatggtca aaagcttaaa cccaaagctt gtcacggtcg 660

ttgaacaaga cgtgaacaca aacacttcac cgttctttcc cagattcata gaggcttacg 720

aatactactc agcagttttc gagtctctag acatgacact tccaagagaa agccaagaga 780

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ctggattcaa tccaaaacca atgagtgcta aagtaaccaa caatatacaa aacctgataa 960

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<211> 351
<212> PRT
<213> Arabidopsis thaliana

<400> 23

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20 25 30

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35 40 45

Pro Pro Ser Asp Glu Arg Leu Ala Ala Met Gln Val Leu Phe Glu Val
50 55 60

Cys Pro Cys Phe Lys Phe Gly Phe Leu Ala Ala Asn Gly Ala Ile Leu
65 70 75 80

Glu Ala Ile Lys Gly Glu Glu Glu Val His Ile Ile Asp Phe Asp Ile
85 90 95

Asn Gln Gly Asn Gln Tyr Met Thr Leu Ile Arg Ser Ile Ala Glu Leu
100 105 110

Pro Gly Lys Arg Pro Arg Leu Arg Leu Thr Gly Ile Asp Asp Pro Glu
115 120 125

Ser Val Gln Arg Ser Ile Gly Gly Leu Arg Ile Ile Asn Leu Arg Leu
130 135 140

Glu Gln Leu Ala Glu Asp Asn Gly Val Ser Phe Lys Phe Lys Ala Met
145 150 155 160

Pro Ser Lys Thr Ser Ile Val Ser Pro Ser Thr Leu Gly Cys Lys Pro
165 170 175

Gly Glu Thr Leu Ile Val Asn Phe Ala Phe Gln Leu His His Met Pro
180 185 190

Asp Glu Ser Val Thr Thr Val Asn Gln Arg Asp Glu Leu Leu His Met
195 200 205

Val Lys Ser Leu Asn Pro Leu Val Thr Val Val Glu Gln Asp Val Asn

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    210                 215                 220

Thr Asn Thr Ser Pro Phe Phe Pro Arg Phe Ile Glu Ala Tyr Glu Tyr
225                 230                 235                 240

Tyr Ser Ala Val Phe Glu Ser Leu Asp Met Thr Leu Pro Arg Glu Ser
                245                 250                 255

Gln Glu Arg Met Asn Val Glu Arg Gln Cys Leu Ala Arg Asp Ile Val
            260                 265                 270

Asn Ile Val Ala Cys Glu Gly Glu Glu Arg Ile Glu Arg Tyr Glu Ala
        275                 280                 285

Ala Gly Lys Trp Arg Ala Arg Met Met Met Ala Gly Phe Asn Pro Lys
    290                 295                 300

Pro Met Ser Ala Lys Val Thr Asn Asn Ile Gln Asn Leu Ile Lys Gln
305                 310                 315                 320

Gln Tyr Cys Asn Lys Tyr Lys Leu Lys Glu Glu Met Gly Glu Leu His
                325                 330                 335

Phe Cys Trp Glu Glu Lys Ser Leu Ile Val Ala Ser Ala Trp Arg
            340                 345                 350
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<210> 24
<211> 100
<212> DNA
<213> Zea mays

<400> 24

ccaggaggcg ttcgagcggg aggagcgtgt gcacatcatc gacctcgaca tcatgcaggg 60

gctgcagtgg ccgggcctcc tccacatcct tgcctcccgc 100

<210> 25
<211> 33
<212> PRT
<213> Zea mays

<400> 25

```
Gln Glu Ala Phe Glu Arg Glu Glu Arg Val His Ile Ile Asp Leu Asp
 1               5                  10                  15

Ile Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala Ser
            20                  25                  30

Arg
```

<210> 26
<211> 1094
<212> DNA
<213> Zea mays

<400> 26

ccacgcgtcc gtcaaaggat acaaccatgt acacataatt gacttttccc tgatgcaagg 60

tctccagtgg ccggcactca tggatgtctt ctccgcccgt gagggtgggc caccaaagct 120

ccgaatcaca ggcattggcc cgaacccaat aggtggccgt gacgagctcc atgaagtggg 180

aattcgcctc gccaagtatg cacactcggt gggtatcgac ttcactttcc agggagtctg 240

tgtcgatcaa cttgataggt tgtgcgactg gatgcttctc aaaccaatca aaggagaggc 300

agttgccata aactccatcc tacaactcca tcgcctcctc gttgacccag atgcaaaccc 360

agtggtgccc gcaccaatag atatcctcct caaattggtc atcaagataa accccatgat 420

cttcacggtg gttgagcatg aggcagatca caacagacca ccactactag agaggttcac 480

taatgccctc ttccactatg cgaccatgtt tgactctttg gaggccatgc atcgttgtac 540

cagtggtaga gacatcaccg actcactcac agaggtgtac cttcgaggtg agatttttga 600

cattgtctgc ggcgagggca gtgcacgcac cgaacgtcat gagttgtttg gtcactggag 660

ggagaggctc acctatgctg ggctaactca agtgtggttc gaccccgatg aggttgacac 720

gctaaaagac cagttgatcc atgtgacatc cttatctggc tctgggttca acatcctagt 780

gtgtgatggc agccttgcac tagcgtggca taatcgcccg ttatatgtgg caacagcttg 840

gtgtgtgaca ggaggaaatg ctgccagttc catggttggc aacatctgta agggtacaaa 900

tgatagtaga agaaaggaaa accgtaatgg acccatggag tagcaggaag aataaccatg 960

tcatgagcaa atcgatcaag taataaaatg cactgatgac atgcatggtg atctaaagtt 1020

tttttgcgtg aatgtgcaat gacgaattgt tcaatttgaa taacctaatc atgagactca 1080

aaaaaaaaaa aaaa 1094

<210> 27
<211> 313
<212> PRT
<213> Zea mays

<400> 27

His Ala Ser Val Lys Gly Tyr Asn His Val His Ile Ile Asp Phe Ser
1 5 10 15

Leu Met Gln Gly Leu Gln Trp Pro Ala Leu Met Asp Val Phe Ser Ala
20 25 30

Arg Glu Gly Gly Pro Pro Lys Leu Arg Ile Thr Gly Ile Gly Pro Asn
35 40 45

Pro Ile Gly Gly Arg Asp Glu Leu His Glu Val Gly Ile Arg Leu Ala
50 55 60

Lys Tyr Ala His Ser Val Gly Ile Asp Phe Thr Phe Gln Gly Val Cys
65 70 75 80

Val Asp Gln Leu Asp Arg Leu Cys Asp Trp Met Leu Leu Lys Pro Ile
85 90 95

Lys Gly Glu Ala Val Ala Ile Asn Ser Ile Leu Gln Leu His Arg Leu
100 105 110

Leu Val Asp Pro Asp Ala Asn Pro Val Val Pro Ala Pro Ile Asp Ile
115 120 125

Leu Leu Lys Leu Val Ile Lys Ile Asn Pro Met Ile Phe Thr Val Val
130 135 140

Glu His Glu Ala Asp His Asn Arg Pro Pro Leu Leu Glu Arg Phe Thr
145 150 155 160

Asn Ala Leu Phe His Tyr Ala Thr Met Phe Asp Ser Leu Glu Ala Met
165 170 175

His Arg Cys Thr Ser Gly Arg Asp Ile Thr Asp Ser Leu Thr Glu Val
180 185 190

Tyr Leu Arg Gly Glu Ile Phe Asp Ile Val Cys Gly Glu Gly Ser Ala
195 200 205

Arg Thr Glu Arg His Glu Leu Phe Gly His Trp Arg Glu Arg Leu Thr
210 215 220

Tyr Ala Gly Leu Thr Gln Val Trp Phe Asp Pro Asp Glu Val Asp Thr
225 230 235 240

Leu Lys Asp Gln Leu Ile His Val Thr Ser Leu Ser Gly Ser Gly Phe
245 250 255

Asn Ile Leu Val Cys Asp Gly Ser Leu Ala Leu Ala Trp His Asn Arg
260 265 270

Pro Leu Tyr Val Ala Thr Ala Trp Cys Val Thr Gly Gly Asn Ala Ala
275 280 285

Ser Ser Met Val Gly Asn Ile Cys Lys Gly Thr Asn Asp Ser Arg Arg
290 295 300

Lys Glu Asn Arg Asn Gly Pro Met Glu
305 310

<210> 28
<211> 611
<212> DNA
<213> Oryza sativa

<400> 28

cccaacttgg gaagcccttc ctccgctccg cctcctacct caaggaggcc ctcctcctcg 60

cactcgccga cagccaccat ggctcctccg gcgtcacctc gccgctcgac gttgccctca 120

agcttgcagc atacaagtct ttctctgacc tgtcacctgt gctccagttc actaacttta 180

ccgcaacaag gcgcttcttg atgagattgg tggcatggca acttcctgca tccatgtcat 240

tgactttgat ctcggtgttg gtggtcagtg ggcttccttc ttgcaggagc ttgcccaccg 300

ccggggagct ggaggtatgg ccttgccgtt gttgaagctc acggctttca tgtcgactgc 360

ttctcaccat ccactggagc tgcaccttac ccaggataac ctctctcagt ttgccgcaga 420

gctcagaatt cctttcgaat tcaatgccgt cagtcttgat gcattcaatc ctgcggaatc 480

tatttcttcc tctggtgatg aagttgttgc tgttagcctc cctgttggct gctctgctcg 540

tgcaccaccg ctgccagcga ttcttcggtt ggtgaaacag ctttgtccta aggttgtcgt 600

ggctattgat c 611

<210> 29
<211> 502
<212> DNA
<213> Oryza sativa

<400> 29

ttttttttt ttttttttt ttttttttt tacagagcaa cagcagtata atattaattc 60

tgtaccacac aaccatttga taggttaaat taccctctag tctctactca taagcagtgt 120

ttccaatgag atgatcatgg ctaattgagc agagcatggc aacaacctaa agcaacatca 180

ttagctatag agactgacac caatattcct aaatccacta ggctagctaa taagctgcaa 240

cgaaaagcaa tatgaagagt tcaacagctc aagacaacaa tttcatttgc aacatttaat 300

tgcaagaata aatggacatt actggagtgg tcgatgcttg caaacggtgg tggaaccttg 360

gtggagtgaa gcttatggct gatcagcacc gccaagatga tatggataca agctccccac 420

gctgccagta gagcgtaaga gcagctccgc gtttctccac atggaatcct cggacctgca 480

cccgcttcag gaggcagtct gc 502

<210> 30
<211> 298
<212> PRT
<213> Arabidopsis thaliana

<400> 30

```
Pro Gln Gln Gln Gln His Gln Gln Gln Gln Gln His Lys Pro
 1               5                  10                  15

Pro Pro Pro Pro Ile Gln Gln Gln Glu Arg Glu Asn Ser Ser Thr Asp
            20                  25                  30

Ala Pro Pro Gln Pro Glu Thr Val Thr Ala Thr Val Pro Ala Val Gln
        35                  40                  45

Thr Asn Thr Ala Glu Ala Leu Arg Glu Arg Lys Glu Glu Ile Lys Arg
    50                  55                  60

Gln Lys Gln Asp Glu Glu Gly Leu His Leu Leu Thr Leu Leu Leu Gln
65                  70                  75                  80

Cys Ala Glu Ala Val Ser Ala Asp Asn Leu Glu Glu Ala Asn Lys Leu
                85                  90                  95

Leu Leu Glu Ile Ser Gln Leu Ser Thr Pro Tyr Gly Thr Ser Ala Gln
            100                 105                 110


Arg Val Ala Ala Tyr Phe Ser Glu Ala Met Ser Ala Arg Leu Leu Asn
        115                 120                 125

Ser Cys Leu Gly Ile Tyr Ala Ala Leu Pro Ser Arg Trp Met Pro Gln
    130                 135                 140

Thr His Ser Leu Lys Met Val Ser Ala Phe Gln Val Phe Asn Gly Ile
145                 150                 155                 160

Ser Pro Leu Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala Ile Gln
                165                 170                 175

Glu Ala Phe Glu Lys Glu Asp Ser Val His Ile Ile Asp Leu Asp Ile
            180                 185                 190

Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala Ser Arg
        195                 200                 205

Pro Gly Gly Pro Pro His Val Arg Leu Thr Gly Leu Gly Thr Ser Met
    210                 215                 220

Glu Ala Leu Gln Ala Thr Gly Lys Arg Leu Ser Asp Phe Thr Asp Lys
225                 230                 235                 240

Leu Gly Leu Pro Phe Glu Phe Cys Pro Leu Ala Glu Lys Val Gly Asn
                245                 250                 255

Asp Leu Thr Glu Arg Leu Asn Val Arg Lys Arg Glu Ala Ala Val His
            260                 265                 270

Trp Leu Gln His Ser Leu Tyr Asp Val Thr Gly Ser Asp Ala His Thr
        275                 280                 285

Leu Trp Leu Leu Gln Arg Leu Ala Pro Lys
    290                 295
```

<210> 31
<211> 307
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 1...307
<223> Xaa=unknown amino acid

<400> 31

```
Gly Thr Ser Pro Thr Gly Pro Glu Leu Leu Thr Tyr Met His Ile Leu
 1               5                  10                  15

Tyr Glu Ala Cys Pro Tyr Phe Lys Phe Gly Tyr Glu Ser Ala Asn Gly
            20                  25                  30

Ala Ile Ala Glu Ala Val Lys Asn Glu Ser Phe Val His Ile Ile Asp
        35                  40                  45

Phe Gln Ile Ser Gln Gly Gly Gln Trp Val Ser Leu Ile Arg Ala Leu
    50                  55                  60

Gly Ala Arg Pro Gly Gly Pro Pro Asn Val Arg Ile Thr Gly Ile Asp
65                  70                  75                  80

Asp Pro Arg Ser Ser Phe Ala Arg Gln Gly Gly Leu Glu Leu Val Gly
                85                  90                  95

Gln Arg Leu Gly Lys Leu Ala Glu Met Cys Gly Val Pro Phe Glu Phe
            100                 105                 110

His Gly Ala Ala Leu Cys Cys Thr Glu Val Glu Ile Glu Lys Leu Gly
        115                 120                 125

Val Arg Asn Gly Glu Ala Leu Ala Val Asn Phe Pro Leu Val Leu His
    130                 135                 140

His Met Pro Asp Glu Ser Val Thr Val Glu Asn His Arg Asp Arg Leu
145                 150                 155                 160

Leu Arg Leu Val Lys His Leu Ser Pro Asn Val Val Thr Leu Val Glu
                165                 170                 175

Gln Glu Ala Asn Thr Asn Thr Ala Pro Phe Leu Pro Arg Phe Val Glu
            180                 185                 190

Thr Met Asn His Tyr Leu Ala Val Phe Glu Ser Ile Asp Val Lys Leu
        195                 200                 205

Ala Arg Asp His Lys Glu Arg Ile Asn Val Glu Gln His Cys Leu Ala
    210                 215                 220

Arg Glu Val Val Asn Leu Ile Ala Cys Glu Gly Val Glu Arg Glu Glu
225                 230                 235                 240
```

```
Arg His Glu Pro Leu Gly Lys Trp Arg Ser Arg Phe His Met Ala Gly
                245                 250                 255

Phe Lys Pro Tyr Pro Leu Ser Ser Tyr Val Asn Ala Thr Ile Lys Gly
            260                 265                 270

Leu Leu Glu Ser Tyr Ser Glu Lys Tyr Thr Leu Glu Glu Arg Asp Gly
        275                 280                 285

Ala Leu Tyr Leu Gly Trp Lys Asn Gln Pro Leu Ile Thr Ser Cys Ala
    290                 295                 300

Trp Arg Xaa
305
```

<210> 32
<211> 353
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 1...353
<223> Xaa=unknown amino acid

<400> 32

```
Leu Ser Met Val Asn Glu Leu Arg Gln Ile Val Ser Ile Gln Gly Asp
 1               5                  10                  15

Pro Ser Gln Arg Ile Ala Ala Tyr Met Val Glu Gly Leu Ala Ala Arg
            20                  25                  30

Met Ala Ala Ser Gly Lys Phe Ile Tyr Arg Ala Leu Lys Cys Lys Glu
        35                  40                  45

Pro Pro Ser Asp Glu Arg Leu Ala Ala Met Gln Val Leu Phe Glu Val
    50                  55                  60

Cys Pro Cys Phe Lys Phe Gly Phe Leu Ala Ala Asn Gly Ala Ile Leu
65                  70                  75                  80

Glu Ala Ile Lys Gly Glu Glu Glu Val His Ile Ile Asp Phe Asp Ile
                85                  90                  95

Asn Gln Gly Asn Gln Tyr Met Thr Leu Ile Arg Ser Ile Ala Glu Leu
            100                 105                 110

Pro Gly Lys Arg Pro Arg Leu Arg Leu Thr Gly Ile Asp Asp Pro Glu
        115                 120                 125

Ser Val Gln Arg Ser Ile Gly Gly Leu Arg Ile Ile Gly Leu Arg Leu
    130                 135                 140

Glu Gln Leu Ala Glu Asp Asn Gly Val Ser Phe Lys Phe Lys Ala Met
145                 150                 155                 160
```

```
Pro Ser Lys Thr Ser Ile Val Ser Pro Ser Thr Leu Gly Cys Lys Pro
                165                 170                 175

Gly Glu Thr Leu Ile Val Asn Phe Ala Phe Gln Leu His His Met Pro
            180                 185                 190

Asp Glu Ser Val Thr Thr Val Asn Gln Arg Asp Glu Leu Leu His Met
        195                 200                 205

Val Lys Ser Leu Asn Pro Lys Leu Val Thr Val Val Glu Gln Asp Val
    210                 215                 220

Asn Thr Asn Thr Ser Pro Phe Phe Pro Arg Phe Ile Glu Ala Tyr Glu
225                 230                 235                 240

Tyr Tyr Ser Ala Val Phe Glu Ser Leu Asp Met Thr Leu Pro Arg Glu
                245                 250                 255

Ser Gln Glu Arg Met Asn Val Glu Arg Gln Cys Leu Ala Arg Asp Ile
            260                 265                 270

Val Asn Ile Val Ala Cys Glu Gly Glu Glu Arg Ile Glu Arg Tyr Glu
        275                 280                 285

Ala Ala Gly Lys Trp Arg Ala Arg Met Met Met Ala Gly Phe Asn Pro
    290                 295                 300

Lys Pro Met Ser Ala Lys Val Thr Asn Asn Ile Gln Asn Leu Ile Lys
305                 310                 315                 320

Gln Gln Tyr Cys Asn Lys Tyr Lys Leu Lys Glu Glu Met Gly Glu Leu
                325                 330                 335

His Phe Cys Trp Glu Glu Lys Ser Leu Ile Val Ala Ser Ala Trp Arg
            340                 345                 350

Xaa
```

<210> 33
<211> 326
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 1...326
<223> Xaa=unknown amino acid

<400> 33

```
Ala Met Glu Gly Glu Lys Met Val His Val Ile Asp Leu Asp Ala Ser
 1               5                  10                  15

Glu Pro Ala Gln Trp Leu Ala Leu Leu Gln Ala Phe Asn Ser Arg Pro
            20                  25                  30

Glu Gly Pro Pro His Leu Arg Ile Thr Gly Val His His Gln Lys Glu
```

```
        35                  40                  45

Val Leu Glu Gln Met Ala His Arg Leu Ile Glu Glu Ala Glu Lys Leu
    50                  55                  60

Asp Ile Pro Phe Gln Phe Asn Pro Val Val Ser Arg Leu Asp Cys Leu
65                  70                  75                  80

Asn Val Glu Gln Leu Arg Val Lys Thr Gly Glu Ala Leu Ala Val Ser
                85                  90                  95

Ser Val Leu Gln Leu His Thr Phe Leu Ala Ser Asp Asp Asp Leu Met
            100                 105                 110
Arg Lys Asn Cys Ala Leu Arg Phe Gln Asn Asn Pro Ser Gly Val Asp
        115                 120                 125

Leu Gln Arg Val Leu Met Met Ser His Gly Ser Ala Ala Glu Ala Arg
    130                 135                 140

Glu Asn Asp Met Ser Asn Asn Asn Gly Tyr Ser Pro Ser Gly Asp Ser
145                 150                 155                 160

Ala Ser Ser Leu Pro Leu Pro Ser Ser Gly Arg Thr Asp Ser Phe Leu
                165                 170                 175

Asn Ala Ile Trp Gly Leu Ser Pro Lys Val Met Val Val Thr Glu Gln
            180                 185                 190

Asp Ser Asp His Asn Gly Ser Thr Leu Met Glu Arg Leu Leu Glu Ser
        195                 200                 205

Leu Tyr Thr Tyr Ala Ala Leu Phe Asp Cys Leu Glu Thr Lys Val Pro
    210                 215                 220

Arg Thr Ser Gln Asp Arg Ile Lys Val Glu Lys Met Leu Phe Gly Glu
225                 230                 235                 240

Glu Ile Lys Asn Ile Ile Ser Cys Glu Gly Phe Glu Arg Arg Glu Arg
                245                 250                 255

His Glu Lys Leu Glu Lys Trp Ser Gln Arg Ile Asp Leu Ala Gly Phe
            260                 265                 270

Gly Asn Val Pro Leu Ser Tyr Tyr Ala Met Leu Gln Ala Arg Arg Leu
        275                 280                 285

Leu Gln Gly Cys Gly Phe Asp Gly Tyr Arg Ile Lys Glu Glu Ser Gly
    290                 295                 300

Cys Ala Val Ile Cys Trp Gln Asp Arg Pro Leu Tyr Ser Val Ser Ala
305                 310                 315                 320

Trp Arg Cys Arg Lys Xaa
                325
```

<210> 34
<211> 277
<212> PRT

<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 1...277
<223> Xaa=unknown amino acid

<400> 34

```
Asn Lys Arg Leu Lys Ser Cys Ser Ser Pro Asp Ser Met Val Thr Ser
 1               5                  10                  15
Thr Ser Thr Gly Thr Gln Ile Gly Gly Val Ile Gly Thr Thr Val Thr
            20                  25                  30

Thr Thr Thr Thr Thr Thr Thr Ala Ala Ala Glu Ser Thr Arg Ser Val
        35                  40                  45

Ile Leu Val Asp Ser Gln Glu Asn Gly Val Arg Leu Val His Ala Leu
    50                  55                  60

Met Ala Cys Ala Glu Ala Ile Gln Gln Asn Asn Leu Thr Leu Ala Glu
65                  70                  75                  80

Ala Leu Val Lys Gln Ile Gly Cys Leu Ala Val Ser Gln Ala Gly Ala
                85                  90                  95

Met Arg Lys Val Ala Thr Tyr Phe Ala Glu Ala Leu Ala Arg Arg Ile
            100                 105                 110

Tyr Arg Leu Ser Pro Pro Gln Asn Gln Ile Asp His Cys Leu Ser Asp
        115                 120                 125

Thr Leu Gln Met His Phe Tyr Glu Thr Cys Pro Tyr Leu Lys Phe Ala
    130                 135                 140

His Phe Thr Ala Asn Gln Ala Ile Leu Glu Ala Phe Glu Gly Lys Lys
145                 150                 155                 160

Arg Val His Val Ile Asp Phe Ser Met Asn Gln Gly Leu Gln Trp Pro
                165                 170                 175

Ala Leu Met Gln Ala Leu Ala Leu Arg Glu Gly Gly Pro Pro Thr Phe
            180                 185                 190

Arg Leu Thr Gly Ile Gly Pro Pro Ala Pro Asp Asn Ser Asp His Leu
        195                 200                 205

His Glu Val Gly Cys Lys Leu Ala Gln Leu Ala Glu Ala Ile His Val
    210                 215                 220

Glu Phe Glu Tyr Arg Gly Phe Val Ala Asn Ser Leu Ala Asp Leu Asp
225                 230                 235                 240

Ala Ser Met Leu Glu Leu Arg Pro Ser Asp Thr Glu Ala Val Ala Val
                245                 250                 255

Asn Ser Val Phe Glu Leu His Lys Leu Leu Gly Arg Xaa Gly Gly Ile
            260                 265                 270
```

Glu Lys Val Leu Gly
275

<210> 35
<211> 262
<212> PRT
<213> Arabidopsis thaliana

<400> 35

Gly Gly Gly Gly Asp Thr Tyr Thr Thr Asn Lys Arg Leu Lys Cys Ser
1 5 10 15

Asn Gly Val Val Glu Thr Thr Thr Ala Thr Ala Glu Ser Thr Arg His
20 25 30

Val Val Leu Val Asp Ser Gln Glu Asn Gly Val Arg Leu Val His Ala
35 40 45

Leu Leu Ala Cys Ala Glu Ala Val Gln Lys Glu Asn Leu Thr Val Ala
50 55 60

Glu Ala Leu Val Lys Gln Ile Gly Phe Leu Ala Val Ser Gln Ile Gly
65 70 75 80

Ala Met Arg Gln Val Ala Thr Tyr Phe Ala Glu Ala Leu Ala Arg Arg
85 90 95

Ile Tyr Arg Leu Ser Pro Ser Gln Ser Pro Ile Asp His Ser Leu Ser
100 105 110

Asp Thr Leu Gln Met His Phe Tyr Glu Thr Cys Pro Tyr Leu Lys Phe
115 120 125

Ala His Phe Thr Ala Asn Gln Ala Ile Leu Glu Ala Phe Gln Gly Lys
130 135 140

Lys Arg Val His Val Ile Asp Phe Ser Met Ser Gln Gly Leu Gln Trp
145 150 155 160

Pro Ala Leu Met Gln Ala Leu Ala Leu Arg Pro Gly Gly Pro Pro Val
165 170 175

Phe Arg Leu Thr Gly Ile Gly Pro Pro Ala Pro Asp Asn Phe Asp Tyr
180 185 190

Leu His Glu Val Gly Cys Lys Leu Ala His Leu Ala Glu Ala Ile His
195 200 205

Val Glu Phe Glu Tyr Arg Gly Phe Val Ala Asn Thr Leu Ala Asp Leu
210 215 220

Asp Ala Ser Met Leu Glu Leu Arg Pro Ser Glu Ile Glu Ser Val Ala
225 230 235 240

Val Asn Ser Val Phe Glu Leu His Lys Leu Leu Gly Arg Pro Gly Ala
245 250 255

Ile Asp Lys Val Leu Gly
260

<210> 36
<211> 203
<212> PRT
<213> Oryza sativa

<400> 36

Gln Leu Gly Lys Pro Phe Leu Arg Ser Ala Ser Tyr Leu Lys Glu Ala
1 5 10 15

Leu Leu Leu Ala Leu Ala Asp Ser His His Gly Ser Ser Gly Val Thr
20 25 30

Ser Pro Leu Asp Val Ala Leu Lys Leu Ala Ala Tyr Lys Ser Phe Ser
35 40 45

Asp Leu Ser Pro Val Leu Gln Phe Thr Asn Phe Thr Ala Asn Lys Ala
50 55 60

Leu Leu Asp Glu Ile Gly Gly Met Ala Thr Ser Cys Ile His Val Ile
65 70 75 80

Asp Phe Asn Leu Gly Val Gly Gly Gln Trp Ala Ser Phe Leu Gln Glu
85 90 95

Leu Ala His Arg Arg Gly Ala Gly Gly Met Ala Leu Pro Leu Leu Lys
100 105 110

Leu Thr Ala Phe Met Ser Thr Ala Ser His His Pro Leu Glu Leu His
115 120 125

Leu Thr Gln Asp Asn Leu Ser Gln Phe Ala Ala Glu Leu Arg Ile Pro
130 135 140

Phe Glu Phe Asn Ala Val Ser Leu Asp Ala Phe Asn Pro Ala Glu Ser
145 150 155 160

Ile Ser Ser Ser Gly Asp Glu Val Val Ala Val Ser Leu Pro Val Gly
165 170 175

Cys Ser Ala Arg Ala Pro Pro Leu Pro Ala Ile Leu Arg Leu Val Lys
180 185 190

Gln Leu Cys Pro Lys Val Val Val Ala Ile Asp
195 200

<210> 37
<211> 131
<212> PRT
<213> Zea mays

<400> 37

```
His Ala Ser Val Lys Gly Tyr Asn His Val His Ile Ile Asp Phe Ser
 1               5                  10                  15

Leu Met Gln Gly Leu Gln Trp Pro Ala Leu Met Asp Val Phe Ser Ala
            20                  25                  30

Arg Glu Gly Gly Pro Pro Lys Leu Arg Ile Thr Gly Ile Gly Pro Asn
        35                  40                  45

Pro Ile Gly Gly Arg Asp Glu Leu His Glu Val Gly Ile Arg Leu Ala
    50                  55                  60

Lys Tyr Ala His Ser Val Gly Ile Asp Phe Thr Phe Gln Gly Val Cys
65                  70                  75                  80

Val Asp Gln Leu Asp Arg Leu Cys Asp Trp Met Leu Leu Lys Pro Ile
                85                  90                  95

Lys Gly Glu Ala Val Ala Ile Asn Ser Ile Leu Gln Leu His Arg Leu
            100                 105                 110

Leu Val Asp Pro Asp Ala Asn Pro Val Val Pro Ala Pro Ile Asp Ile
        115                 120                 125

Leu Leu Lys
    130
```

<210> 38
<211> 33
<212> PRT
<213> Zea mays

<400> 38

```
Gln Glu Ala Phe Glu Arg Glu Glu Arg Val His Ile Ile Asp Leu Asp
 1               5                  10                  15

Ile Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala Ser
            20                  25                  30

Arg
```

<210> 39
<211> 29
<212> PRT
<213> Zea mays

<220>
<221> SITE
<222> 1...29
<223> Xaa=unknown amino acid

<400> 39

```
Phe Ala Gly Cys Arg Arg Val His Val Val Asp Phe Gly Ile Lys Gln
```

```
 1               5                   10                  15

Gly Met Gln Trp Pro Ala Leu Leu Xaa Asp Leu Ala Leu
            20                  25
```

<210> 40
<211> 73
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> 1...73
<223> Xaa=unknown amino acid

<400> 40

```
Gly Arg Asn Gly Arg Thr Leu Trp Leu Gly Glu Gly His Ile Asp Leu
 1               5                   10                  15

Trp Pro Leu Gln Gly Leu Leu Ser Gln Gly Leu Gln Arg Ala Leu Cys
            20                  25                  30

Ala Arg Pro Leu Gly Ala Pro His Val Phe Leu Pro Gly Leu His Thr
        35                  40                  45

Leu Ser Leu Gly Leu Gln Xaa Arg His Leu Leu Val His Met Met Ala
    50                  55                  60

Leu Ser Tyr Ser Tyr Gly Arg Xaa Pro
65                  70
```

<210> 41
<211> 59
<212> PRT
<213> Arabidopsis thaliana

<400> 41

```
Thr Ser Asp Ser Ala Ser Ser Phe Asn Ile Pro Thr Ser Ala Gln Asn
 1               5                   10                  15

His Tyr Ala Thr Gly Ser Phe Ser Thr Asn Ser Arg Thr Thr Asn Val
            20                  25                  30

Ala Thr Ala Thr Thr Asn Ser Ala Thr Ala His Trp Val Ala Thr Asp
        35                  40                  45

Ala Glu His Thr Asp Thr Ile Ile Ala Gln Pro
    50                  55
```

<210> 42
<211> 110
<212> PRT
<213> Brassica napus

<220>
<221> SITE
<222> 1...110
<223> Xaa=unknown amino acid

<400> 42

Arg Xaa Phe Asp Ser Leu Glu His Asp Ala Ser Lys Gly Glu Pro Arg
 1   5   10   15

Glu Asp Glu Arg Gly Arg Xaa Cys Leu Ala Arg Asn Ile Val Asn Ile
            20   25   30

Val Xaa Cys Lys Xaa Glu Glu Arg Ile Glu Arg Tyr Glu Val Thr Gly
        35   40   45

Lys Trp Arg Ala Arg Met Met Met Ala Gly Phe Ser Pro Arg Pro Met
    50   55   60

Ser Gly Arg Val Thr Ser Asn Ile Glu Ser Leu Ile Lys Arg Asp Tyr
65   70   75   80

Cys Ser Lys Tyr Lys Val Lys Glu Glu Met Gly Glu Leu His Phe Ser
                85   90   95

Trp Glu Glu Lys Ser Leu Ile Val Ala Ser Ala Trp Ser Xaa
            100   105   110

<210> 43
<211> 137
<212> PRT
<213> Oryza sativa

<220>
<221> SITE
<222> 1...137
<223> Xaa=unknown amino acid

<400> 43

Asn Gly Ser Tyr Asn Ala Pro Phe Phe Val Thr Arg Phe Arg Glu Ala
 1   5   10   15

Leu Phe His Tyr Ser Ala Ile Phe Asp Met Leu Glu Thr Asn Ile Pro
            20   25   30

Lys Asp Asn Glu Gln Arg Leu Leu Ile Glu Ser Ala Leu Phe Ser Arg
        35   40   45

Glu Xaa Asn Val Ile Ser Cys Glu Gly Leu Glu Arg Met Glu Arg Pro
    50   55   60

Glu Thr Tyr Lys Gln Trp Gln Val Arg Asn Gln Arg Val Gly Phe Lys
65   70   75   80

Gln Leu Pro Leu Asn Gln Asp Met Met Lys Arg Ala Arg Xaa Glu Gly
                85   90   95

Gln Val Leu Pro Thr Arg Thr Phe Ile Ile Asp Glu Asp Asn Arg Trp
100 105 110

Leu Leu Gln Gly Trp Lys Gly Arg Ile Leu Phe Ala Leu Ser Thr Trp
115 120 125

Lys Pro Asp Asn Arg Ser Ser Ser Xaa
130 135

<210> 44
<211> 41
<212> PRT
<213> Oryza sativa

<400> 44

Asn Gly Gly Ala Phe Ala Pro Ser Thr Trp Thr Ala Arg Ser Leu Asn
1 5 10 15

Gly Gly Ala Phe Ala Pro Ser Thr Trp Thr Ala Arg Ser Leu Pro Val
20 25 30

Pro Ser Ser Pro Ser Thr Asp Ser Phe
35 40

<210> 45
<211> 1279
<212> DNA
<213> Arabidopsis thaliana

<400> 45

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tgtctagctc aggggatatt ggcgcggctc aatcaacagc tctcttctcc cgtcgggaag 180

ccattagaaa gagcagcttt ttacttcaaa gaagctctca ataatctcct tcacaacgtc 240

tcccaaaccc taaaccctta ttccctcatc ttcaagatcg ctgcttacaa atccttctca 300

gagatctctc ccgttcttca gttcgccaac tttacctcca accaagccct cttagagtcc 360

ttccatggct tccaccgtct ccacatcatc gacttcgata tcggctacgg tggccaatgg 420

gcttccctca tgcaagagct tgttctccgc gacaacgccg ctcctctctc cctcaagatc 480

accgttttcg cttctccggc gaaccacgac cagctcgaac ttggcttcac tcaagacaac 540

ctcaagcact tcgcctctga gatcaacatc tcccttgaca tccaagtttt gagcttagac 600

ctcctcggct ccatctcgtg gcctaactcg tcggagaaag aagctgtcgc cgttaacatc 660

tccgccgcgt ccttctcgca cctccctttg gtcctccgtt tcgtgaagca tctatctccg 720

acgatcatcg tctgctccga cagaggatgc gagaggacgg atctgccctt ctctcaacag 780

ctcgcccact cgctgcactc acacaccgct ctcttcgaat ccctcgacgc cgtcaacgcc 840

aacctcgacg caatgcagaa gatcgagagg tttcttatac agccggagat agagaagctg 900

gtgttggatc gtagccgtcc gatagaaagg ccgatgatga cgtggcaagc gatgtttcta 960

cagatgggtt tctcaccggt gacgcacagt aacttcacgg agtctcaagc cgagtgttta 1020

gtccaacgga cgccagtgag aggctttcac gtcgagaaga aacataactc acttctccta 1080

tgttggcaaa ggacagaact cgtcggagtt tcagcatgga gatgtcgctc ctcctgattt 1140

ccaccggagt ttcaattatt aaaaaaatat tttccttaat tcaatttatc ttaaatgaca 1200

aatttttagt ttctgatttt attttgctca gtgcgatgga tttttaaatt taagtttcac 1260

acaaatatat aaatttttg 1279

<210> 46
<211> 379
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 1...379
<223> Xaa=unknown amino acid

<400> 46

Ala Ala Ile Phe Tyr Gly His His His His Thr Pro Pro Pro Ala Lys
1 5 10 15

Arg Leu Asn Pro Gly Pro Val Gly Ile Thr Glu Gln Leu Val Lys Ala
20 25 30

Ala Glu Val Ile Glu Ser Asp Thr Cys Leu Ala Gln Gly Ile Leu Ala
35 40 45

Arg Leu Asn Gln Gln Leu Ser Ser Pro Val Gly Lys Pro Leu Glu Arg
50 55 60

Ala Ala Phe Tyr Phe Lys Glu Ala Leu Asn Asn Leu Leu His Asn Val
65 70 75 80

Ser Gln Thr Leu Asn Pro Tyr Ser Leu Ile Phe Lys Ile Ala Ala Tyr
85 90 95

Lys Ser Phe Ser Glu Ile Ser Pro Val Leu Gln Phe Ala Asn Phe Thr
100 105 110

Ser Asn Gln Ala Leu Leu Glu Ser Phe His Gly Phe His Arg Leu His
115 120 125

```
Ile Ile Asp Phe Asp Ile Gly Tyr Gly Gly Gln Trp Ala Ser Leu Met
    130                 135                 140

Gln Glu Leu Val Leu Arg Asp Asn Ala Ala Pro Leu Ser Leu Lys Ile
145                 150                 155                 160

Thr Val Phe Ala Ser Pro Ala Asn His Asp Gln Leu Glu Leu Gly Phe
                165                 170                 175

Thr Gln Asp Asn Leu Lys His Phe Ala Ser Glu Ile Asn Ile Ser Leu
            180                 185                 190

Asp Ile Gln Val Leu Ser Leu Asp Leu Leu Gly Ser Ile Ser Trp Pro
        195                 200                 205

Asn Ser Ser Glu Lys Glu Ala Val Ala Val Asn Ile Ser Ala Ala Ser
    210                 215                 220

Phe Ser His Leu Pro Leu Val Leu Arg Phe Val Lys His Leu Ser Pro
225                 230                 235                 240

Thr Ile Ile Val Cys Ser Asp Arg Gly Cys Glu Arg Thr Asp Leu Pro
                245                 250                 255

Phe Ser Gln Gln Leu Ala His Ser Leu His Ser His Thr Ala Leu Phe
            260                 265                 270

Glu Ser Leu Asp Ala Val Asn Ala Asn Leu Asp Ala Met Gln Lys Ile
        275                 280                 285

Glu Arg Phe Leu Ile Gln Pro Glu Ile Glu Lys Leu Val Leu Asp Arg
    290                 295                 300

Ser Arg Pro Ile Glu Arg Pro Met Met Thr Trp Gln Ala Met Phe Leu
305                 310                 315                 320

Gln Met Gly Phe Ser Pro Val Thr His Ser Asn Phe Thr Glu Ser Gln
                325                 330                 335

Ala Glu Cys Leu Val Gln Arg Thr Pro Val Arg Gly Phe His Val Glu
            340                 345                 350

Lys Lys His Asn Ser Leu Leu Leu Cys Trp Gln Arg Thr Glu Leu Val
        355                 360                 365

Gly Val Ser Ala Trp Arg Cys Arg Ser Ser Xaa
    370                 375
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<210> 47
<211> 745
<212> DNA
<213> Arabidopsis thaliana

<400> 47

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gatttttgac atgcttgaga caattgtgcc acgagaagac gaagagagga tgttccttga 120

gatggaggtc tttgggagag aggcactgaa tgtgattgct tgcgaaggtt gggaaagagt 180

ggagaggcct gagacataca agcagtggca cgtacgggct atgaggtcag ggttggtgca 240

ggttccattt gacccaagca ttatgaagac atcgctgcat aaggtccaca cattctacca 300

caaggatttt gtgatcgatc aagataaccg gtggctcttg caaggctgga agggaagaac 360

tgtcatggct ctttctgttt ggaaaccaga gtccaaggct tgaccgagaa atcctcgttg 420

gcatatgaga gaccatctct tgattttctt cctgtgtaat tcccagagac agaattacag 480

atgtaagaag agaatgctgc acaaagaact tgttcaaaga taatattgat gtaagtcctg 540

ttttataact ttctagctgt gtttttgttg tttctcagct agattctcct aacggtattc 600

ttgtagctag ggtgatcaga ttgtttgtat attgctagca gagttagttt gtctagattg 660

taacacatat aagaggaagc ttagagtttc tatggtttaa agagaagttt tttccttctc 720

caatgtaaaa aaaaaaaaaa aaaaa 745

<210> 48
<211> 134
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 1...134
<223> Xaa=unknown amino acid

<400> 48

Ala Tyr Asn Ala Pro Phe Phe Val Thr Arg Phe Arg Glu Ala Leu Phe
1 5 10 15

His Phe Ser Ser Ile Phe Asp Met Leu Glu Thr Ile Val Pro Arg Glu
20 25 30

Asp Glu Glu Arg Met Phe Leu Glu Met Glu Val Phe Gly Arg Glu Ala
35 40 45

Leu Asn Val Ile Ala Cys Glu Gly Trp Glu Arg Val Glu Arg Pro Glu
50 55 60

Thr Tyr Lys Gln Trp His Val Arg Ala Met Arg Ser Gly Leu Val Gln
65 70 75 80

Val Pro Phe Asp Pro Ser Ile Met Lys Thr Ser Leu His Lys Val His
85 90 95

Thr Phe Tyr His Lys Asp Phe Val Ile Asp Gln Asp Asn Arg Trp Leu
100 105 110

Leu Gln Gly Trp Lys Gly Arg Thr Val Met Ala Leu Ser Val Trp Lys
115 120 125

Pro Glu Ser Lys Ala Xaa
130

<210> 49
<211> 775
<212> DNA
<213> Arabidopsis thaliana

<400> 49

aaaaaatggg aaaccatcac tcttgatgaa cttatgatca atccaggaga gacaacggtc 60

gtcaactgca ttcatcggtt acaatacact cctgatgaaa ctgtgtcatt agactctcca 120

agagacacgg ttctgaagct attcagagat atcaatcctg acctctttgt gtttgcagag 180

attaacggaa tgtacaactc tcctttcttc atgacgaggt tccgagaagc gctttttcat 240

tactcttcac tctttgacat gtttgacacc acaatacacg cagaggatga gtacaaaaac 300

aggtcactgt tggagagaga gttacttgtg agagacgcga tgagcgtgat ttcctgcgag 360

ggtgcagagc ggtttgcgag gcctgaaacc tacaagcaat ggcgagttag gattttgaga 420

gccgggttta agccagcaac tattagcaaa cagatcatga aggaggctaa ggaaattgtg 480

aggaaacgtt accatagaga ttttgtgatc gatagcgata acaattggat gcttcaagga 540

tggaaaggaa gagtcatcta tgctttttct tgctggaaac ctgctgagaa gttcacaaac 600

aataatttaa acatctgaaa aatgttactt ctcaattaca tcatttttgt ttcccaatgg 660

ttttgtagaa tatgtttgat cccgtgagtg gatgcaactc ttttttcctg caagtacata 720

ttgtattcaa atccttgtgg aaatgataaa ttgtttaatc aaaaaaaaaa aaaaa 775

<210> 50
<211> 206
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 1...206
<223> Xaa=unknown amino acid

<400> 50

Lys Lys Trp Glu Thr Ile Thr Leu Asp Glu Leu Met Ile Asn Pro Gly
1 5 10 15

Glu Thr Thr Val Val Asn Cys Ile His Arg Leu Gln Tyr Thr Pro Asp

```
            20                  25                  30

Glu Thr Val Ser Leu Asp Ser Pro Arg Asp Thr Val Leu Lys Leu Phe
        35                  40                  45

Arg Asp Ile Asn Pro Asp Leu Phe Val Phe Ala Glu Ile Asn Gly Met
    50                  55                  60

Tyr Asn Ser Pro Phe Phe Met Thr Arg Phe Arg Glu Ala Leu Phe His
65                  70                  75                  80

Tyr Ser Ser Leu Phe Asp Met Phe Asp Thr Thr Ile His Ala Glu Asp
                85                  90                  95

Glu Tyr Lys Asn Arg Ser Leu Leu Glu Arg Glu Leu Leu Val Arg Asp
            100                 105                 110

Ala Met Ser Val Ile Ser Cys Glu Gly Ala Glu Arg Phe Ala Arg Pro
        115                 120                 125

Glu Thr Tyr Lys Gln Trp Arg Val Arg Ile Leu Arg Ala Gly Phe Lys
    130                 135                 140

Pro Ala Thr Ile Ser Lys Gln Ile Met Lys Glu Ala Lys Glu Ile Val
145                 150                 155                 160

Arg Lys Arg Tyr His Arg Asp Phe Val Ile Asp Ser Asp Asn Asn Trp
                165                 170                 175

Met Leu Gln Gly Trp Lys Gly Arg Val Ile Tyr Ala Phe Ser Cys Trp
            180                 185                 190

Lys Pro Ala Glu Lys Phe Thr Asn Asn Asn Leu Asn Ile Xaa
        195                 200                 205
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<210> 51
<211> 548
<212> DNA
<213> Arabidopsis thaliana

<400> 51

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aatcgcttga accgaatttg gatcgagatt cgaaagaaag gctgagagtg gagagagtgc      60

tgttcggtag gaggattatg gatttggtcc gatcagatga tgataataat aaaccgggaa     120

cccggtttgg gttaatggag gagaaagaac aatggagagt gttgatggag aaagctggat     180

ttgagccggt taaaccgagt aattacgcgg ttagccaagc gaagctgcta ctatggaact     240

acaattatag tacattgtat tcacttgttg aatcggagcc aggtttcatc tccttggctt     300

ggaacaatgt gcctctcctc accgtttcct cttggcgttg actacttggt ccgataagtt     360

aatctagtat tttgagttag cttttagaat tgaattgttt ggggttagat ttggatgttt     420

aattagtctc tagcctattc tcttactctt ttttgtctag tgcttggagt gatgatggtt     480
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tgtcgtttat gttcatttgt aatatatatt gtatgtaaca tttgactaaa aaaaaaaaaa 540

aaaaaaaa 548

<210> 52
<211> 113
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 1...113
<223> Xaa=unknown amino acid

<400> 52

Ser Leu Glu Pro Asn Leu Asp Arg Asp Ser Lys Glu Arg Leu Arg Val
1 5 10 15

Glu Arg Val Leu Phe Gly Arg Arg Ile Met Asp Leu Val Arg Ser Asp
20 25 30

Asp Asp Asn Asn Lys Pro Gly Thr Arg Phe Gly Leu Met Glu Glu Lys
35 40 45

Glu Gln Trp Arg Val Leu Met Glu Lys Ala Gly Phe Glu Pro Val Lys
50 55 60

Pro Ser Asn Tyr Ala Val Ser Gln Ala Lys Leu Leu Leu Trp Asn Tyr
65 70 75 80

Asn Tyr Ser Thr Leu Tyr Ser Leu Val Glu Ser Glu Pro Gly Phe Ile
85 90 95

Ser Leu Ala Trp Asn Asn Val Pro Leu Leu Thr Val Ser Ser Trp Arg
100 105 110

Xaa

<210> 53
<211> 1093
<212> DNA
<213> Arabidopsis thaliana

<400> 53

gcgaatgttg agatcttgga agcaatagct ggggaaacca gagtccacat tatcgatttt 60

cagattgcac agggatcaca atacatgttt ttgattcagg agcttgcgaa acgccctggt 120

gggccgccgt tgctgcgtgt gacgggtgtg gatgattcac agtccaccta tgctcgtggg 180

ggaggactca gcttggtagg tgagaggctt gcaactttgg cgcagtcatg tggtgtcccg 240

tttgagtttc acgatgccat catgtctggg tgcaaggtgc agcgggaaca tctcgggttg 300

gaacctggct ttgctgttgt tgtgaacttc ccatatgtat tacaccacat gccagacgag 360

agcgtaagtg ttgaaaaata cagagacagg ctgctgcatc tgatcaagag cctctcccca 420

aaactggtta ctctagtaga gcaagaatcc aacacaaaca cctcgccatt ggtgtcacgg 480

tttgtggaaa cactggatta ctacacagcg atgtttgagt cgatagatgc agcacggcca 540

cgggatgata agcagagaat cagcgcagaa caacactgtg tagcaagaga catagtgaac 600

atgatagcat gtgaggagtc agagagagta gagagacacg aggtactggg gaaatggagg 660

gtcagaatga tgatggctgg gttcacgggt tggccggtca gcacatctgc agcgtttgca 720

gcgagtgaga tgctgaaagc ttatgacaaa aactacaaac tgggaggcca tgaaggagcg 780

ctctacctct tctggaagag acgacccatg gctacatgtt ccgtgtggaa gccaaaccca 840

aactatattg ggtaagttat agtgatgatg gttacttgag tggataaaga agagcacaac 900

aaaaacacat ctgtcgctgt aaatttttta ggatgtgcaa tgatgtttta agttgtaaca 960

caacctaagt tatatatgta tacaaaccaa acctggtggt tgtttttctc ttgtaaattg 1020

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aaaaaaaaaa aaa 1093

<210> 54
<211> 285
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 1...285
<223> Xaa=unknown amino acid

<400> 54

Ala Asn Val Glu Ile Leu Glu Ala Ile Ala Gly Glu Thr Arg Val His
1 5 10 15

Ile Ile Asp Phe Gln Ile Ala Gln Gly Ser Gln Tyr Met Phe Leu Ile
20 25 30

Gln Glu Leu Ala Lys Arg Pro Gly Gly Pro Pro Leu Leu Arg Val Thr
35 40 45

Gly Val Asp Asp Ser Gln Ser Thr Tyr Ala Arg Gly Gly Gly Leu Ser
50 55 60

Leu Val Gly Glu Arg Leu Ala Thr Leu Ala Gln Ser Cys Gly Val Pro
65 70 75 80

Phe Glu Phe His Asp Ala Ile Met Ser Gly Cys Lys Val Gln Arg Glu
85 90 95

```
His Leu Gly Leu Glu Pro Gly Phe Ala Val Val Val Asn Phe Pro Tyr
            100                 105                 110

Val Leu His His Met Pro Asp Glu Ser Val Ser Val Glu Lys Tyr Arg
        115                 120                 125

Asp Arg Leu Leu His Leu Ile Lys Ser Leu Ser Pro Lys Leu Val Thr
    130                 135                 140

Leu Val Glu Gln Glu Ser Asn Thr Asn Thr Ser Pro Leu Val Ser Arg
145                 150                 155                 160

Phe Val Glu Thr Leu Asp Tyr Tyr Thr Ala Met Phe Glu Ser Ile Asp
                165                 170                 175

Ala Ala Arg Pro Arg Asp Asp Lys Gln Arg Ile Ser Ala Glu Gln His
            180                 185                 190

Cys Val Ala Arg Asp Ile Val Asn Met Ile Ala Cys Glu Glu Ser Glu
        195                 200                 205

Arg Val Glu Arg His Glu Val Leu Gly Lys Trp Arg Val Arg Met Met
    210                 215                 220

Met Ala Gly Phe Thr Gly Trp Pro Val Ser Thr Ser Ala Ala Phe Ala
225                 230                 235                 240

Ala Ser Glu Met Leu Lys Ala Tyr Asp Lys Asn Tyr Lys Leu Gly Gly
                245                 250                 255

His Glu Gly Ala Leu Tyr Leu Phe Trp Lys Arg Arg Pro Met Ala Thr
            260                 265                 270

Cys Ser Val Trp Lys Pro Asn Pro Asn Tyr Ile Gly Xaa
        275                 280                 285
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<210> 55
<211> 1928
<212> DNA
<213> Arabidopsis thaliana

<400> 55

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ttttatagtc aagcagctct caacgctttt ctttcaaggt ctgtgaagcc tcgaaattat     120

cagaattttc aatctccgtc ggccgatgat tgatctcacg tcggtgaatg atatgagttt     180

gtttggtggt tctggttcat ctcagcgtta cggtttaccg gttcccaggt ctcagacgca     240

acagcaacaa tcggattacg gtttatttgg tgggatccga atgggaatcg ggtcgggtat     300

taataattat ccaacattaa ccggcgttcc gtgtattgaa ccggttcaaa accgggttca     360

tgaatcggag aacatgttga atagtttaag agagcttgag aaacagcttt tagatgatga     420
```

cgatgagagt ggtggtgatg atgacgtgtc agttataaca aattcaaatt ccgattggat 480

tcaaaatctc gtgactccga acccgaaccc gaacccggtt ttgtcttttt caccgagctc 540

ttcttcttcg tcttcttcgc cttctacagc ttcgacgacg acatcggtat gttctaggca 600

aacggttatg gaaatcgcga cggcgatcgc ggaagggaaa acagagatag cgacggagat 660

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tttcatggtg gctgcgcttc gatcgaggat agcttctcca gtgacggaat tgtatgggaa 780

ggagcattta atctcgactc aattgctcta cgagctctct ccttgtttca aactcggttt 840

cgaggccgcg aatctcgcca ttctcgacgc cgccgataac aacgacggtg gaatgatgat 900

accgcacgtt atcgatttcg atatcggaga aggtggacaa tacgttaacc ttctccgtac 960

attatccacg cgccggaatg gtaaaagtca gagtcagaat tctccggtgg ttaagatcac 1020

cgccgtggcg aacaacgttt acggatgttt agtcgatgac ggtggagaag agaggttaaa 1080

agccgtcgga gatttgttga gccaactcgg tgatcgactc ggtatctccg taagtttcaa 1140

cgtggtgacg agtttacgac tcggtgatct gaatcgtgaa tctctcgggt gtgatcccga 1200

cgagactttg gctgtgaact tagctttcaa gctttatcgt gttcccgacg aaagcgtatg 1260

cacggagaat ccaagagacg aacttctccg gcgcgtgaag ggacttaaac cgcgcgtggt 1320

tactctagtg gagcaagaaa tgaattcgaa tacggcgccg tttttaggga gagtgagtga 1380

gtcatgcgcg tgttacggtg cgttgcttga gtcggtcgag tctacggttc ctagtacgaa 1440

ttccgaccgt gccaaagttg aggaaggaat tggccggaag ctagtaaacg cggtggcgtg 1500

cgaaggaatc gatcgtatag agcggtgcga ggtgttcggg aaatggcgaa tgcggatgag 1560

catggctggg tttgagttaa tgccattgag tgagaagata gcggagtcga tgaagagtcg 1620

tggaaaccga gtccacccgg gctttaccgt taaagaagat aacggaggtg tgtgctttgg 1680

ttggatggga cgggcactca ctgtcgcatc cgcttggcgt taacttcaca cactcttttt 1740

tttcttctta ttattaccat attattatta attttcgaga ttattctgat attattatca 1800

ttgtgatttt ccgtttcgaa aagtgtagga atcttatgta acaaagaaaa aaaaaagact 1860

tttatgtttt tctaataata aaagaaagag tgattgggtt caaaaaaaaa aaaaaaaaaa 1920

aaaaaaaa 1928

<210> 56
<211> 524
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 1...524
<223> Xaa=unknown amino acid

<400> 56

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Asp Leu Thr Ser Val Asn Asp Met Ser Leu Phe Gly Gly Ser Gly Ser
 1               5                  10                  15

Ser Gln Arg Tyr Gly Leu Pro Val Pro Arg Ser Gln Thr Gln Gln Gln
            20                  25                  30

Gln Ser Asp Tyr Gly Leu Phe Gly Gly Ile Arg Met Gly Ile Gly Ser
        35                  40                  45

Gly Ile Asn Asn Tyr Pro Thr Leu Thr Gly Val Pro Cys Ile Glu Pro
    50                  55                  60

Val Gln Asn Arg Val His Glu Ser Glu Asn Met Leu Asn Ser Leu Arg
65                  70                  75                  80

Glu Leu Glu Lys Gln Leu Leu Asp Asp Asp Asp Glu Ser Gly Gly Asp
                85                  90                  95

Asp Asp Val Ser Val Ile Thr Asn Ser Asn Ser Asp Trp Ile Gln Asn
            100                 105                 110

Leu Val Thr Pro Asn Pro Asn Pro Asn Pro Val Leu Ser Phe Ser Pro
        115                 120                 125

Ser Ser Ser Ser Ser Ser Ser Ser Pro Ser Thr Ala Ser Thr Thr Thr
    130                 135                 140

Ser Val Cys Ser Arg Gln Thr Val Met Glu Ile Ala Thr Ala Ile Ala
145                 150                 155                 160

Glu Gly Lys Thr Glu Ile Ala Thr Glu Ile Leu Ala Arg Val Ser Gln
                165                 170                 175

Thr Pro Asn Leu Glu Arg Asn Ser Glu Glu Lys Leu Val Asp Phe Met
            180                 185                 190

Val Ala Ala Leu Arg Ser Arg Ile Ala Ser Pro Val Thr Glu Leu Tyr
        195                 200                 205

Gly Lys Glu His Leu Ile Ser Thr Gln Leu Leu Tyr Glu Leu Ser Pro
    210                 215                 220

Cys Phe Lys Leu Gly Phe Glu Ala Ala Asn Leu Ala Ile Leu Asp Ala
225                 230                 235                 240

Ala Asp Asn Asn Asp Gly Gly Met Met Ile Pro His Val Ile Asp Phe
                245                 250                 255

Asp Ile Gly Glu Gly Gly Gln Tyr Val Asn Leu Leu Arg Thr Leu Ser
            260                 265                 270
```

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Thr Arg Arg Asn Gly Lys Ser Gln Ser Gln Asn Ser Pro Val Val Lys
        275                 280                 285

Ile Thr Ala Val Ala Asn Asn Val Tyr Gly Cys Leu Val Asp Asp Gly
    290                 295                 300

Gly Glu Glu Arg Leu Lys Ala Val Gly Asp Leu Leu Ser Gln Leu Gly
305                 310                 315                 320

Asp Arg Leu Gly Ile Ser Val Ser Phe Asn Val Val Thr Ser Leu Arg
                325                 330                 335

Leu Gly Asp Leu Asn Arg Glu Ser Leu Gly Cys Asp Pro Asp Glu Thr
            340                 345                 350

Leu Ala Val Asn Leu Ala Phe Lys Leu Tyr Arg Val Pro Asp Glu Ser
        355                 360                 365

Val Cys Thr Glu Asn Pro Arg Asp Glu Leu Leu Arg Arg Val Lys Gly
    370                 375                 380

Leu Lys Pro Arg Val Val Thr Leu Val Glu Gln Glu Met Asn Ser Asn
385                 390                 395                 400

Thr Ala Pro Phe Leu Gly Arg Val Ser Glu Ser Cys Ala Cys Tyr Gly
                405                 410                 415

Ala Leu Leu Glu Ser Val Glu Ser Thr Val Pro Ser Thr Asn Ser Asp
            420                 425                 430

Arg Ala Lys Val Glu Glu Gly Ile Gly Arg Lys Leu Val Asn Ala Val
        435                 440                 445

Ala Cys Glu Gly Ile Asp Arg Ile Glu Arg Cys Glu Val Phe Gly Lys
    450                 455                 460

Trp Arg Met Arg Met Ser Met Ala Gly Phe Glu Leu Met Pro Leu Ser
465                 470                 475                 480

Glu Lys Ile Ala Glu Ser Met Lys Ser Arg Gly Asn Arg Val His Pro
                485                 490                 495

Gly Phe Thr Val Lys Glu Asp Asn Gly Gly Val Cys Phe Gly Trp Met
            500                 505                 510

Gly Arg Ala Leu Thr Val Ala Ser Ala Trp Arg Xaa
        515                 520
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<210> 57
<211> 2635
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...2635
<223> n=a, c, g, or t

<400> 57

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tgggttctta tccggatgga ttccctggat ccatggacga gttggatttc aataaggact 180

ttgatttgcc tccctcctca aaccaaacct taggtttagc taatgggttc tatttagatg 240

acttagattt ctcatccttg gatcctccag aggcatatcc ctcccagaac aacaacaaca 300

acaacatcaa caacaaagct gtagcaggag atctgttatc atcttcatct gatgacgctg 360

atttctctga ttctgttttg aagtatataa gccaagttct tatggaagag gatatggaag 420

agaagccttg tatgtttcat gatgctttgg ctcttcaagc tgctgagaaa tctctctatg 480

aggctcttgg tgagaaagac ccttcttcgt cttctgcttc ttctgtggat catcctgaga 540

gattggctag tcatagccct gacggttctt gttcaggtgg tgcttttagt gattacgcta 600

gcaccactac cactacttcc tctgattctc actggagtgt tgatggtttg gagaatagac 660

cttcttggtt acatacacct atgccgagta attttgtttt ccagtctact tctaggtcca 720

acagtgtcac cggtggtggt ggtggtggta atagtgcggt ttacggttca ggttttggcg 780

atgatttggt ttcgaatatg tttaaagatg atgaattggc tatgcagttc aagaaagggg 840

ttgaggaagc tagtaagttc cttcctaagt cttctcagct ctttattgat gtggatagtt 900

acatccctat gaattctggt tccaaggaaa atggttctga ggtttttgtt aagacggaga 960

agaaagatga gacagagcat catcatcatc atagctatgc accaccaccc aacagattaa 1020

ctggtaagaa aagccattgg cgcgacgaag atgaagattt cgttgaagaa agaagtaaca 1080

agcaatcagc tgtttatgtt gaggaaagcg agctttctga aatgtttgat aacatgttcc 1140

tatgtggccc tgggaaacct gtatgcattc ttaaccagaa ctttcctaca gaatccgcta 1200

aagtcgtgac cgcacagtca aatggagcaa agattcgtgg gaagaaatca acttctacta 1260

gtcatagtaa cgattctaag aaagaaactg ctgatttgag gactcttttg gtgttatgtg 1320

cacaagctgt atcagtggat gatcgtagaa ccgccaacgt ttagctaagg cagatacgag 1380

agcattcttc gcctctaggc aatggttcag agcggttggc tcattatttt gcaaatagtc 1440

ttgaagcacg cttagctggg accggtacac agatctacac cgctttatct tcgaagaaaa 1500

cgtctgcagc agacatgttg aaggcttacc agacatacat gtcggtctgc cctttcaaga 1560

aagctgctat catatttgct aaccacagca tgatgcgttt cactgcaaac gccaacacga 1620

tccacataat agatttcgga atatcttacg gttttcagtg gcctgctctg attcatcgcc 1680

tctcgctcag cagacctggt ggttcgccta agcttcgaat taccggtnnn nnnnnnnnnn 1740

nnnnnnnnnn nnnnnnnnnn nnngagttca ggagacaggt catcgcttgg ctcgatactg 1800

tcagcgacac aatgttccgt ttgagtacaa cgcaattgct cagaaatggg gaaacgatcc 1860

aagtcgaaga cttaaagctt cgacaaggag agtatgtggt tgtgaactct ttgttccgtt 1920

tcaggaacct tctagatgag accgttctgg taaacagccc gagagatgca gttttgaagc 1980

tgataagaaa aataaacccg aatgtcttca ttccagcgat cttaagcggg aattacaacg 2040

cgccattctt tgtcacgagg ttcagagaag cgttgtttca ttactcggct gtgtttgata 2100

tgtgtgactc gaagctagct agggaagacg agatgaggct gatgtatgtg tttgagtttt 2160

atgggagaga gattgtgaat gttgtggctt ctgaaggaac agagagagtg gagagccgag 2220

agacatataa gcagtggcag gcgagactga tccgagccgg atttagacag cttccgcttg 2280

agaaggaact gatgcagaat ctgaagttga aaatcgaaaa cgggtacgat aaaaacttcg 2340

atgttgatca aaacggtaac tggttacttc aagggtggaa aggtagaatc gtgtatgctt 2400

catctctatg ggttccttcg tcttcataga tgttgtttct tacgttctaa gcgactggga 2460

tttatgtagg gcttttctgt tgatagtctc tcgccaacac gagtggatta agttcagagt 2520

tagggttctt gaacactaga atgttgttat attatgcttg tgacatagcg tgtgtaagag 2580

tgtagcctaa gagatatagt actcattgca tgatcttttg ctatatgttn catgt 2635

<210> 58
<211> 809
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 1...809
<223> Xaa=unknown amino acid

<400> 58

Leu Leu Lys Val Leu Leu Cys His Leu Val Ala Glu Ser Thr Lys Arg
 1   5   10   15

Arg Ile Lys Ile Arg Pro Leu Leu Asp Ile Asn Asp Ser Gly Phe Leu
            20   25   30

Gly Phe Trp Ser Trp Ile His Met Gly Ser Tyr Pro Asp Gly Phe Pro
        35   40   45

Gly Ser Met Asp Glu Leu Asp Phe Asn Lys Asp Phe Asp Leu Pro Pro
    50   55   60

```
Ser Ser Asn Gln Thr Leu Gly Leu Ala Asn Gly Phe Tyr Leu Asp Asp
65                  70                  75                  80

Leu Asp Phe Ser Ser Leu Asp Pro Pro Glu Ala Tyr Pro Ser Gln Asn
                85                  90                  95

Asn Asn Asn Asn Asn Ile Asn Asn Lys Ala Val Ala Gly Asp Leu Leu
            100                 105                 110

Ser Ser Ser Ser Asp Asp Ala Asp Phe Ser Asp Ser Val Leu Lys Tyr
        115                 120                 125

Ile Ser Gln Val Leu Met Glu Glu Asp Met Glu Glu Lys Pro Cys Met
    130                 135                 140

Phe His Asp Ala Leu Ala Leu Gln Ala Ala Glu Lys Ser Leu Tyr Glu
145                 150                 155                 160

Ala Leu Gly Glu Lys Asp Pro Ser Ser Ser Ser Ala Ser Ser Val Asp
                165                 170                 175

His Pro Glu Arg Leu Ala Ser His Ser Pro Asp Gly Ser Cys Ser Gly
            180                 185                 190

Gly Ala Phe Ser Asp Tyr Ala Ser Thr Thr Thr Thr Thr Ser Ser Asp
        195                 200                 205

Ser His Trp Ser Val Asp Gly Leu Glu Asn Arg Pro Ser Trp Leu His
    210                 215                 220

Thr Pro Met Pro Ser Asn Phe Val Phe Gln Ser Thr Ser Arg Ser Asn
225                 230                 235                 240

Ser Val Thr Gly Gly Gly Gly Gly Gly Asn Ser Ala Val Tyr Gly Ser
                245                 250                 255

Gly Phe Gly Asp Asp Leu Val Ser Asn Met Phe Lys Asp Asp Glu Leu
            260                 265                 270

Ala Met Gln Phe Lys Lys Gly Val Glu Glu Ala Ser Lys Phe Leu Pro
        275                 280                 285

Lys Ser Ser Gln Leu Phe Ile Asp Val Asp Ser Tyr Ile Pro Met Asn
    290                 295                 300

Ser Gly Ser Lys Glu Asn Gly Ser Glu Val Phe Val Lys Thr Glu Lys
305                 310                 315                 320

Lys Asp Glu Thr Glu His His His His His Ser Tyr Ala Pro Pro Pro
                325                 330                 335

Asn Arg Leu Thr Gly Lys Lys Ser His Trp Arg Asp Glu Asp Glu Asp
            340                 345                 350

Phe Val Glu Glu Arg Ser Asn Lys Gln Ser Ala Val Tyr Val Glu Glu
        355                 360                 365

Ser Glu Leu Ser Glu Met Phe Asp Asn Met Phe Leu Cys Gly Pro Gly
```

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    370                 375                 380

Lys Pro Val Cys Ile Leu Asn Gln Asn Phe Pro Thr Glu Ser Ala Lys
385                 390                 395                 400

Val Val Thr Ala Gln Ser Asn Gly Ala Lys Ile Arg Gly Lys Lys Ser
                405                 410                 415

Thr Ser Thr Ser His Ser Asn Asp Ser Lys Lys Glu Thr Ala Asp Leu
            420                 425                 430

Arg Thr Leu Leu Val Leu Cys Ala Gln Ala Val Ser Val Asp Asp Arg
        435                 440                 445

Arg Thr Ala Asn Val Xaa Leu Arg Gln Ile Arg Glu His Ser Ser Pro
    450                 455                 460

Leu Gly Asn Gly Ser Glu Arg Leu Ala His Tyr Phe Ala Asn Ser Leu
465                 470                 475                 480

Glu Ala Arg Leu Ala Gly Thr Gly Thr Gln Ile Tyr Thr Ala Leu Ser
                485                 490                 495

Ser Lys Lys Thr Ser Ala Ala Asp Met Leu Lys Ala Tyr Gln Thr Tyr
            500                 505                 510

Met Ser Val Cys Pro Phe Lys Lys Ala Ala Ile Ile Phe Ala Asn His
        515                 520                 525

Ser Met Met Arg Phe Thr Ala Asn Ala Asn Thr Ile His Ile Ile Asp
    530                 535                 540

Phe Gly Ile Ser Tyr Gly Phe Gln Trp Pro Ala Leu Ile His Arg Leu
545                 550                 555                 560

Ser Leu Ser Arg Pro Gly Gly Ser Pro Lys Leu Arg Ile Thr Gly Xaa
                565                 570                 575

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Glu Phe Arg Arg Gln
            580                 585                 590

Val Ile Ala Trp Leu Asp Thr Val Ser Asp Thr Met Phe Arg Leu Ser
        595                 600                 605

Thr Thr Gln Leu Leu Arg Asn Gly Glu Thr Ile Gln Val Glu Asp Leu
    610                 615                 620

Lys Leu Arg Gln Gly Glu Tyr Val Val Val Asn Ser Leu Phe Arg Phe
625                 630                 635                 640

Arg Asn Leu Leu Asp Glu Thr Val Leu Val Asn Ser Pro Arg Asp Ala
                645                 650                 655

Val Leu Lys Leu Ile Arg Lys Ile Asn Pro Asn Val Phe Ile Pro Ala
            660                 665                 670

Ile Leu Ser Gly Asn Tyr Asn Ala Pro Phe Phe Val Thr Arg Phe Arg
        675                 680                 685
```

Glu Ala Leu Phe His Tyr Ser Ala Val Phe Asp Met Cys Asp Ser Lys
690 695 700

Leu Ala Arg Glu Asp Glu Met Arg Leu Met Tyr Val Phe Glu Phe Tyr
705 710 715 720

Gly Arg Glu Ile Val Asn Val Val Ala Ser Glu Gly Thr Glu Arg Val
725 730 735

Glu Ser Arg Glu Thr Tyr Lys Gln Trp Gln Ala Arg Leu Ile Arg Ala
740 745 750

Gly Phe Arg Gln Leu Pro Leu Glu Lys Glu Leu Met Gln Asn Leu Lys
755 760 765

Leu Lys Ile Glu Asn Gly Tyr Asp Lys Asn Phe Asp Val Asp Gln Asn
770 775 780

Gly Asn Trp Leu Leu Gln Gly Trp Lys Gly Arg Ile Val Tyr Ala Ser
785 790 795 800

Ser Leu Trp Val Pro Ser Ser Ser Xaa
805

<210> 59
<211> 90
<212> PRT
<213> Oryza sativa

<220>
<221> SITE
<222> 1...90
<223> Xaa=unknown amino acid

<400> 59

Gln Glu Ala Asp His Asn Lys Thr Gly Phe Leu Asp Arg Phe Thr Glu
1 5 10 15

Ala Leu Phe Tyr Tyr Ser Ala Val Phe Asp Ser Leu Asp Ala Ala Asn
20 25 30

Asn Asn Asn Asn Asn Asn Asn Gln Arg Met Glu Ala Glu Tyr Leu Gln
35 40 45

Arg Glu Ile Cys Asp Ile Val Cys Gly Glu Gly Ala Ala Arg Xaa Glu
50 55 60

Arg His Glu Pro Leu Ser Arg Trp Arg Asp Arg Leu Thr Arg Ala Gly
65 70 75 80

Leu Ser Ala Val Pro Leu Gly Ser Asn Ala
85 90

<210> 60
<211> 199
<212> DNA

<213> Daucus carota

<220>
<221> modified_base
<222> 1...199
<223> n=a, c, g, or t

<400> 60

tctgcagaca attttnagga ggccaatacc atgctattgg aaatttcaga actgtccaca 60

cctnnnnnnn nnnnnnnnnn nnnnnnnnnn nnngtacttc tcagaggnaa tgtcggnnag 120

attagttagc tcctgcttag gaatctatgc ttctcttccn gcaacagtgg tgcctcctca 180

tggtcagaaa gtggcctca 199

<210> 61
<211> 66
<212> PRT
<213> Daucus carota

<220>
<221> SITE
<222> 1...66
<223> Xaa=unknown amino acid

<400> 61

Ser Ala Asp Asn Phe Xaa Glu Ala Asn Thr Met Leu Leu Glu Ile Ser
1 5 10 15

Glu Leu Ser Thr Pro Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr
20 25 30

Phe Ser Glu Xaa Met Ser Xaa Arg Leu Val Ser Ser Cys Leu Gly Ile
35 40 45

Tyr Ala Ser Leu Pro Ala Thr Val Val Pro Pro His Gly Gln Lys Val
50 55 60

Ala Ser
65

<210> 62
<211> 321
<212> DNA
<213> Glycine max

<220>
<221> modified_base
<222> 1...321
<223> n=a, c, g, or t

<400> 62

tcaactgaga atctagaaga tgccaacaag atgcttctgg agatttctca gttatcaaca 60

ccgttcnnca cttcagcaca gcgtgtggca gcatatttct cagaagccat atcagcaagg 120

ttggtgagtt catgtctagg gatatacgca actttgccac acacacacca aagccacaag 180

gtagcttcag cttttcaagt gttcaatggt attagtcctt tagtggagtt ctcacacttc 240

acagcaaacc aagcaattca agaagccttc gaaagagaag agagggtgca catcatagat 300

cttgatataa tgcaagggtt g 321

<210> 63
<211> 107
<212> PRT
<213> Glycine max

<220>
<221> SITE
<222> 1...107
<223> Xaa=unknown amino acid

<400> 63

Ser Thr Glu Asn Leu Glu Asp Ala Asn Lys Met Leu Leu Glu Ile Ser
1 5 10 15

Gln Leu Ser Thr Pro Phe Xaa Thr Ser Ala Gln Arg Val Ala Ala Tyr
20 25 30

Phe Ser Glu Ala Ile Ser Ala Arg Leu Val Ser Ser Cys Leu Gly Ile
35 40 45

Tyr Ala Thr Leu Pro His Thr His Gln Ser His Lys Val Ala Ser Ala
50 55 60

Phe Gln Val Phe Asn Gly Ile Ser Pro Leu Val Glu Phe Ser His Phe
65 70 75 80

Thr Ala Asn Gln Ala Ile Gln Glu Ala Phe Glu Arg Glu Glu Arg Val
85 90 95

His Ile Ile Asp Leu Asp Ile Met Gln Gly Leu
100 105

<210> 64
<211> 195
<212> DNA
<213> Picea abies

<220>
<221> modified_base
<222> 1...195
<223> n=a, c, g, or t

<400> 64

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ccctatngca actcggtgca acgagtggct gcctatnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nntgcatagg aatgtattct cctctccctc ctattcacat gtcccagagc 180

cagaaaattg tgaat 195

<210> 65
<211> 65
<212> PRT
<213> Picea abies

<220>
<221> SITE
<222> 1...65
<223> Xaa=unknown amino acid

<400> 65

Ser Ala Asp Asn Phe Glu Glu Ala Asn Thr Ile Leu Pro Gln Ile Thr
1 5 10 15

Glu Leu Ser Thr Pro Tyr Xaa Asn Ser Val Gln Arg Val Ala Ala Tyr
20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Ile Gly Met
35 40 45

Tyr Ser Pro Leu Pro Pro Ile His Met Ser Gln Ser Gln Lys Ile Val
50 55 60

Asn
65

<210> 66
<211> 2151
<212> DNA
<213> Zea mays

<400> 66

gatatcagca tcatcaattt taaatgtaag ttggcaaaag atcatgaggg ttctcatagt 60

aatttggcca caaggtatga cactgtctca attgagcaat ctagtagaga aactgatcca 120

tcatatattg ctcatattga aagtgaaaaa gatatgctca agaacctagt agagaagcta 180

aaaattgaaa aatctagctc tactagaaaa atatgatagg ttgcctgttt ctcatgaaaa 240

tttattagat aatcatatca tggctagatg tcgctcatga ggttgttctt gctagtttag 300

attcctgtgg gcattcatct cttttagatg cactaacatg ataggaagtt tctaatctgg 360

tgcttcacaa ttctggtgat tcatgcttcc ttcattgcaa ttgatattga tgcttgattc 420

atgcttcagt cactttgtgc gtttaattgg tattgtatgt atcactagat tgtagggtgt 480

ctgcaactag tgtttcacca tgtggttttt tagtatcatt cgtattagtt tctaactttc 540

tattgatata ttaaagtgat aactagtttt agaaatattc tcttgtgcca ttaatgctac 600

aacttgtttt tagcgtgtac gttagcatta taatatttcc ttattatgaa agcggaagag 660

aaacgcgccc aaccagagca tccacgtcgt ctcatttcac cttcatcgtt ggatcataga 720

tgagcggtcc acggtgaact ccgtttgcct gcaaaaccac gtcctctacg cgctgttaag 780

tagcttctag aaacatcacg atgtgtcccg tccattcctt taggaggagc cggatccggc 840

gccgcagtcg cccaaggtcc cgaccgccgc ggcctcggcc gccgccgcca aggagcggaa 900

ggaggtgcag cggcggaagc agcgcgacga ggagggcctc cacctgctga gtgctgacgc 960

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tgctggagat cgcggagctg gccacgccgt tcggcacctc gacccagcgc gtggccgcct 1080

acttcgcgga ggccatgtcg gcgcgcgtcg tcagctcctg cctaggcctg tacgcgccgc 1140

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tgttcaacgg catcagcccc ttcgtcaagt tctcgcactt caccgccaac caggccatcc 1260

aggaggcgtt cgagcgggag gagcgtgtgc acatcatcga cctcgacatc atgcaggggc 1320

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ggctcaccgg cctgggggcg tccatggacg cgctcgaggc gacggggaag cgcctctccg 1440

acttcgccga cacgctcggc ctgcccttcg agttctgcgc cgtcgccgag aaggccggca 1500

acgttgaccc gcagaagctg ggcgtcacgc ggcgggaggc cgtcgccgtc cactggccgc 1560

accactcgct ttacgacgtc atcggctccg actccaacac gctctggctc atccaaaggt 1620

cctccatttt ccttctctgc ctttcttcca tgtcaaatct tgatgcaatc atgaccactt 1680

ttcagctgct gacattggat aatgtgagct ttacggcaag catcaagtcg tggtagtaca 1740

tccattacag ctatttctaa aatattcttc ggaggtttcc tgctcatagt aaaaaaaaat 1800

cgcgttttga agctcaaaag gcgatttctt ccgaggtttg ctgttgagcg ctattttgga 1860

aaccccattt tctcaattga tttttatttt ttaaagaaaa attagttcat ttttctcttg 1920

tgaaatggag tcccaaacta accctaatat taaaaaaaac gcgctttgga gctcaaaacg 1980

ctcgttgtta tgaccaacca gctttatagg tttaaaaagg ttgaatcttg acaatgcttt 2040

tgaaaaggtt gaatcttgac aatgcttttg agatgatact gtagtgtagt ctgtagtgga 2100

gcatcctcca tggtctttgg tgatcgagaa ttcctgcagc ccgggggatc c 2151

<210> 67
<211> 716
<212> PRT
<213> Zea mays

<220>
<221> SITE
<222> 1...716
<223> Xaa=unknown amino acid

<400> 67

Tyr Gln His His Gln Phe Xaa Met Xaa Val Gly Lys Arg Ser Xaa Gly
 1   5   10   15
Phe Ser Xaa Xaa Phe Gly His Lys Val Xaa His Cys Leu Asn Xaa Ala
            20   25   30

Ile Xaa Xaa Arg Asn Xaa Ser Ile Ile Tyr Cys Ser Tyr Xaa Lys Xaa
        35   40   45

Lys Arg Tyr Ala Gln Glu Pro Ser Arg Glu Ala Lys Asn Xaa Lys Ile
    50   55   60

Xaa Leu Tyr Xaa Lys Asn Met Ile Gly Cys Leu Phe Leu Met Lys Ile
65   70   75   80

Tyr Xaa Ile Ile Ile Ser Trp Leu Asp Val Ala His Glu Val Val Leu
                85   90   95

Ala Ser Leu Asp Ser Cys Gly His Ser Ser Leu Leu Asp Ala Leu Thr
            100   105   110

Xaa Xaa Glu Val Ser Asn Leu Val Leu His Asn Ser Gly Asp Ser Cys
        115   120   125

Phe Leu His Cys Asn Xaa Tyr Xaa Cys Leu Ile His Ala Ser Val Thr
    130   135   140

Leu Cys Val Xaa Leu Val Leu Tyr Val Ser Leu Asp Cys Arg Val Ser
145   150   155   160

Ala Thr Ser Val Ser Pro Cys Gly Phe Leu Val Ser Phe Val Leu Val
                165   170   175

Ser Asn Phe Leu Leu Ile Tyr Xaa Ser Asp Asn Xaa Phe Xaa Lys Tyr
            180   185   190

Ser Leu Val Pro Leu Met Leu Gln Leu Val Phe Ser Val Tyr Val Ser
        195   200   205

Ile Ile Ile Phe Pro Tyr Tyr Glu Ser Gly Arg Glu Thr Arg Pro Thr
    210   215   220

Arg Ala Ser Thr Ser Ser His Phe Thr Phe Ile Val Gly Ser Xaa Met
225   230   235   240

Ser Gly Pro Arg Xaa Thr Pro Phe Ala Cys Lys Thr Thr Ser Ser Thr

245 250 255

Arg Cys Xaa Val Ala Ser Arg Asn Ile Thr Met Cys Pro Val His Ser
260 265 270

Phe Arg Arg Ser Arg Ile Arg Arg Arg Ser Arg Pro Arg Ser Arg Pro
275 280 285

Pro Arg Pro Arg Pro Pro Pro Pro Arg Ser Gly Arg Arg Cys Ser Gly
290 295 300

Gly Ser Ser Ala Thr Arg Arg Ala Ser Thr Cys Xaa Val Leu Thr Leu
305 310 315 320

Leu Leu Gln Cys Ala Glu Ala Val Asn Ala Asp Asn Leu Asp Asp Ala
325 330 335

His Gln Thr Leu Leu Glu Ile Ala Glu Leu Ala Thr Pro Phe Gly Thr
340 345 350

Ser Thr Gln Arg Val Ala Ala Tyr Phe Ala Glu Ala Met Ser Ala Arg
355 360 365

Val Val Ser Ser Cys Leu Gly Leu Tyr Ala Pro Leu Pro Pro Gly Ser
370 375 380

Pro Ala Ala Ala Arg Leu His Gly Arg Val Ala Ala Ala Phe Gln Val
385 390 395 400

Phe Asn Gly Ile Ser Pro Phe Val Lys Phe Ser His Phe Thr Ala Asn
405 410 415

Gln Ala Ile Gln Glu Ala Phe Glu Arg Glu Glu Arg Val His Ile Ile
420 425 430

Asp Leu Asp Ile Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile
435 440 445

Leu Val Ser Arg Pro Gly Gly Pro Pro Arg Val Arg Leu Thr Gly Leu
450 455 460

Gly Ala Ser Met Asp Ala Leu Glu Ala Thr Gly Lys Arg Leu Ser Asp
465 470 475 480

Phe Ala Asp Thr Leu Gly Leu Pro Phe Glu Phe Cys Ala Val Ala Glu
485 490 495

Lys Ala Gly Asn Val Asp Pro Gln Lys Leu Gly Val Thr Arg Arg Glu
500 505 510

Ala Val Ala Val His Trp Pro His His Ser Leu Tyr Asp Val Ile Gly
515 520 525

Ser Asp Ser Asn Thr Leu Trp Leu Ile Gln Arg Ser Ser Ile Phe Leu
530 535 540

Leu Cys Leu Ser Ser Met Ser Asn Leu Asp Ala Ile Met Thr Thr Phe
545 550 555 560

```
Gln Leu Leu Thr Leu Asp Asn Val Ser Phe Thr Ala Ser Ile Lys Ser
               565                 570                 575

Trp Xaa Tyr Ile His Tyr Ser Tyr Phe Xaa Asn Ile Leu Arg Arg Phe
            580                 585                 590

Pro Ala His Ser Lys Lys Lys Ser Arg Phe Glu Ala Gln Lys Ala Ile
        595                 600                 605

Ser Ser Glu Val Cys Cys Xaa Ala Leu Phe Trp Lys Pro His Phe Leu
    610                 615                 620

Asn Xaa Phe Leu Phe Phe Lys Glu Lys Leu Val His Phe Ser Leu Val
625                 630                 635                 640

Lys Trp Ser Pro Lys Leu Thr Leu Ile Leu Lys Lys Thr Arg Phe Gly
                645                 650                 655

Ala Gln Asn Ala Arg Cys Tyr Asp Gln Pro Ala Leu Xaa Val Xaa Lys
            660                 665                 670

Gly Xaa Ile Leu Thr Met Leu Leu Lys Arg Leu Asn Leu Asp Asn Ala
        675                 680                 685

Phe Glu Met Ile Leu Xaa Cys Ser Leu Xaa Trp Ser Ile Leu His Gly
    690                 695                 700

Leu Trp Xaa Ser Arg Ile Pro Ala Ala Arg Gly Ile
705                 710                 715
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<210> 68
<211> 426
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...426
<223> n=a, c, g, or t

<400> 68

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ctttgtcaat ggtaaatgag ctgaggcaga tagtttctat ccaaggagac ccttctcaga      60

gaatcgcagc ttacatggtg gaaggtctag ctgcaagaat ggccgcttca ggaaaattca     120

tctacagagc attgaaatgc aaagagcctc cttcggatga gaggcttgca gctatgagat     180

cctgtttgaa gtctgccctt gtttcaagtt cgggttttta gcagctaatg gtgcgatact     240

tgaagcaatc aaaggtgaag aagaagttca cataatcgat ttcgatataa accaagggaa     300

ccaatacatg acactgatac gaagcattgc tgagttngcc tgggtaaacg acctcgcctg     360

aggttaaaca ggaattgatg accctgaatc cagtnccaac cgctccattt ggggggcct      420

aaagaa                                                                426
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<210> 69
<211> 343
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...343
<223> n=a, c, g, or t

<400> 69

gagtacgatc ttaaagctat tcccggtgac gcgattctca atcagttcgc tatcgattcg 60

gcttcttcgt ctaaccaagg cggcggagga gatacgtata ctacaaacaa gcggttgaaa 120

tgctcaaacg gcgtcgtgga aaccactaca gcgacggctg agatcaactc ggcatgttgt 180

cctggttgac tcgcaggaga acggtgtgcg tctcgttcac gcgcttttgg cttgcgctga 240

aagctgttca gaaagagaat ctgactgtag cggantctgg tgaagcaaat cggattctta 300

gccgtttctc aaatcggagc gatgagaaaa gtcgctactt act 343

<210> 70
<211> 372
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...372
<223> n=a, c, g, or t

<400> 70

aaatttttca ttacctaat ataatgaaag ataagatctt aacaagtgac aaagggaaaa 60

acagtaggat ttagtttggc ttcggtcgga aatctatcat cataaccggt tcaacagatc 120

aattcattga gccaccatct aattggtgag agtttccaag ccgaggtggc tatgagcggt 180

cgtgtgtgcc aacccaacat gagacagccg tcactctcct ccacccgata accctcaccg 240

ccgttgaaca gagccaaaag catactcgct tgcttaaacg cattcgaacc aatatgtgca 300

gccgcaaacc cagcagaccc gaaccggttc ctccantgac ttcaacgttt catgacggtt 360

caacttcggt ca 372

<210> 71
<211> 399
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...399
<223> n=a, c, g, or t

<400> 71

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aagactcatt cacacttagc aaataggttt agaaccaaaa ctctaattat ttttatataa 120

tagggaaaaa aaagaaagaa aaattcttcc ataagtgtta gattagcttt tagtacctgt 180

gatcacccct aacctctggt aataatacat ggagatgatt taaccagtta cacaataacc 240

caagattaca gtaaaaacat aattatgttt tatgaaacat aaagactata tgctcttgtc 300

acttatctta cctccaagct gaagcaacgg attaagcttt tctcctccca gcaaaaatgg 360

gagctcaccc atttcttctt taaggttgta cttnttgca 399

<210> 72
<211> 307
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...307
<223> n=a, c, g, or t

<400> 72

gctatggaag gagagaagat ggttcatgtg attgatctcg atgcttctga gccagctcaa 60

tggcttgctt tgcttcaagc ttttaactct aggcctgaag gtccacctca tttgagaatc 120

actggtgttc atcaccagaa ggaagtgctt gaacaaatgg ctcatagact cattgaggaa 180

gcagagaaac tcgatatccc gtttcagttt aatcccgttg tgagtaggtt agactgttta 240

aatgtagnac agtttagggt ttaaacagga gaggcnttag ccgttagctc ggttcttcaa 300

ttgcata 307

<210> 73
<211> 345
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1..345
<223> n=a, c, g, or t

<400> 73

ccgatcatca aattagttat cttcagctca aattggattt ggtttggtat tacacccaca 60

ccagaccaaa ttgaaccaac acacaaaggc tttacatgca gaggcagtag aagcatttaa 120

gccaaaatag cataaagaga cagaaagtca ccatcacaaa acaactaaga ttgtgtcccc 180

atgtatacaa aaaagaaagg gactctgctc ataaccaaaa tagaagacaa actgtaatat 240

atcattcact tcctgcatct ccaagctgat accgagtata gaggtcgatc ttgccagcaa 300

attactgcgc acccgntctc ttccttgatt ctatacccat caaaa 345

<210> 74
<211> 406
<212> DNA
<213> Arabidopsis thaliana

<400> 74

gtggaattac aattacagca atttgtattc aattgttgaa tctaagcctg gcttcatctc 60

tttggcctgg aacgatttac ctctcctcac tctttcttcc tggcgataac caaaccaaac 120

cgatccggta ttcttagttt tgttttgttt tcaatgttat ttttggttag acaaatattc 180

aattgttaat atactccgtg gtcagagtgt tttgtttttc ttttagttcg aacgttgaat 240

taattcaggg gtaggttttg aattctctga accttatgtg ttttttggta acatcatttg 300

gatttgtgaa ctaggtttaa aaactggtct tagtcttgtt gttttctcat tagataattt 360

aaactggttt gcttctttat ttttgggttg ggataaaagt gaccgg 406

<210> 75
<211> 406
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...406
<223> n=a, c, g, or t

<400> 75

gtggaattnc aattacagca atttgtattc aattgttgaa tctaagcctg gcttcatctc 60

tttggcctgg aacgatttac ctctcctcac tctttcttcc angcgataac caaaccaaac 120

cgatgccggt attcttagtt ttgttttgtt ttcaatgtta tttttggtta gacaaatatt 180

caattgttaa tatactccgt ggtcagagtg ttttgttttn cttttagttc gaacgttgaa 240

ttaattcagg ggtaggtttt gaattctctg aacctnatgt gttttntggt aacatcattt 300

ggatttgtga actaggttta aaaactggnc ttagtcttgt tgttttctca ttaggataat 360

ttaaactggt ttgcttcttt attttnggtt gggataaagt gaccgg 406

<210> 76
<211> 409
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...409
<223> n=a, c, g, or t

<400> 76

caaaactaca tttcatcact tttttgagca aaattacaaa taaaagagta gttacaaata 60

tatttggctt tcaacttcct aattttatga aatagtaatt acatctcaaa cagatgacca 120

gaaccggtca ctttatccaa ccaaaaataa agaagcaaac cagtttaaat tatctaatga 180

gaaaacaaca agactaagac cagtttttaa acctagttca caaatccaaa tgatgttacc 240

aaaaaacaca taaggttcag agaattcaaa acctacccct ganttaattc aacgttcgaa 300

ctaaaagaaa aacaaaacac tctgaccacg gagtatatta acatttgatt atttgtctaa 360

ccaaaaataa cattgaaaac aaaacaaaac tanggaatac cggatcggt 409

<210> 77
<211> 295
<212> DNA
<213> Arabidopsis thaliana

<400> 77

cccaacgggt cctgagcttc ttacttatat gcatatcttg tatgaagcct gcccttattt 60

caaattcggt tatgaatctg ctaatggagc tatagctgaa gctgtgaaga acgaaagttt 120

tgtgcacatt atcgatttcc agatttctca aggtggtcaa tgggtgagtt tgatccgtgc 180

tcttggtgct agacctggtg gacctccgaa cgttaggata acgggaattg atgatccgag 240

atcatcgttt gctcgtcaag gaggacttgc agttagttgc acaaagcact tggca 295

<210> 78
<211> 319
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...319
<223> n=a, c, g, or t

<400> 78

gggtcatcaa catatcactt actactacaa catttgacaa cttgttcctn cggatcatgc 60

atgagtttta cttttacaaa cagattctgc aaactttaaa agcaagtttc taatctcttc 120

tgaaaccgaa caaggttttt attagttacc tccaagcaca agaagtgata agaggttgat 180

tcttccatcc taaatacaat gctccatctc tttcttcaag tgtatacttc tctgaataac 240

tctcaagcaa tcctttgatt gttgcgttca catacgagct caaaggatac ggtttaaatc 300

ccgccatgtg aaaccgaga 319

<210> 79
<211> 409
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1..409
<223> n=a, c, g, or t

<400> 79

caaaaattta tatatttgtg tgaacttaaa tttaaaaatc catcgcactg agcaaaataa 60

nntcagaaac taaaaatttg tcatttaaga taaattgaat taaggaaaat atttttttaa 120

taattgaaac tccggtggaa atcaggagga gcgacatctc catgctgaaa ctccgacgag 180

ttctgtcctt tgccaacata ggagaagtga gttatgtttc tcctcgacgt gaaagcctct 240

cactggcgtc cgttggntna aacactcggc ttgagactcc gtgaagttac tgtgcgtcac 300

cggtgagaaa cccatctgta gaaacatcgc ttgccacgtc atcatcggcc tttctatcgg 360

acggctacga tccaacacca gcttctctat ctccggctgt ataaggaaa 409

<210> 80
<211> 457
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1..457
<223> n=a, c, g, or t

<400> 80

ctattttnac aatttatttt gttattagaa gtggtagtgg agtgaaaaaa caaatcctaa 60

gcagtcctaa ccgatccccg aagctaaaga ttctncacct tcccaaataa agcaaaacct 120

agatccgaca ttgaaggaaa aacctttag atccatctct gaaaaaaacc aaccatgaag 180

agagatcatc atcatcatca tcatcaagat aagaagacta tgatgatgaa tgaagaagnc 240

gacggtaacg gcatggatga gcttctagct gttcttggtt ataaggttag gtcatccgaa 300

atggctgatg tttgctcaga aactcgagca gcttgaagtt atgatgtcta atgttcaagn 360

aagncggtct ttntcaactt cgcnacttnn gactgttcac tntaatncgg cggnngtttt 420

caacgntggc ttgntttcna tgntnaccga ccttaat 457

<210> 81
<211> 355
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...355
<223> n=a, c, g, or t

<400> 81

atgggaaagg agcatttaat ctcgactcaa ttgctctacg agctctctcc ttgtttcaaa 60

ctcggtttcg aggccgcgaa tctcgccatt ntcgacgccg ccgataacaa cgacggtgga 120

atnatgatac cgcacgtaat cgatttcaat atcggagaag gtggacaata cgttaacctt 180

ctccntacat tatccacgcg ccggaatggt aaaagtnaga gtcagaattc tccggtggtt 240

aanatcaccc gccgtggcga acaacgttta cgggatgttt agtcggatga cgggtggnga 300

agagaggttt aaaagcccgt ncgngntttt ttttgnagcc actncngntn atccg 355

<210> 82
<211> 381
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...381
<223> n=a, c, g, or t

<400> 82

actcggtatc tccgtaagtt tcaacgtggt gacgagttta cgactcggtg atctgaatcg 60

tnaatctntc gggtgtnatc ccgacgagac tttggctgta aacttagctt tcaagcttta 120

tcgtgttccc gacgaaagcg tatncacgga gaatccaaga cgaacttctc cggcgcgtga 180

agggacttaa accgcgcgtg gttactctag tggagcaaga aatgaattcg aatacggcgc 240

cgtttttagg gagagtaagt nagtcatgcg cgtttnacgg tgcgttnctt gantcggtcg 300

agtctacggt tcctagtacg gatttccgac ccgtgccaaa atttnnggaa ggaatttgcc 360

cgnaannttn naaaccgggt g 381

<210> 83
<211> 533
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1.533
<223> n=a, c, g, or t

<400> 83

atnaaaagtc ttttttttt ctttgttaca taagattcct acacttttcg aaatggaaaa 60

tcacaatgat aataatatca gaataatctc gaaaattaat aataatatgg taataataag 120

aagaaaaaaa aagagtgtgt gaagttaacg ccaagcggat gcgacagtga gtgcccgtcc 180

catccaacca aagcacacac ctccgttatc ttctttaacg gtaaagcccg ggtggactcg 240

gtttccacga ctcttcatcg actccgctat cttctcactc aatggcatta actcaaaccc 300

agccatgctc atccgcattc gccatttncc ggaacanctc gnaccgctct atacgntcga 360

ttccttcgga cggcaccgng ttttactagc ttccggncaa ttccttcctn aactttggaa 420

cggtnggatt cgttcttggg accgtaggct tggcccgctt aagaacgnac cgtacagggg 480

nntgttttnt taatttccct taaaaggggg cgnttttggg ttnatttttn ana 533

<210> 84
<211> 377
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...377
<223> n=a, c, g, or t

<400> 84

caaccntttt atagtcaagc agctctcaac gctttttttt caaggtctgt naagcctcga 60

aattatcaga ntttncaatc tccgtcgccg atgattganc tcacgtcggt gaatgatatg 120

agtttntttg gnggttctgg ttcatctcag cnttacggtt taccggttcc caggtctcan 180

acgcaacagc aacaatcgga ttacggttta tttggtggga tccgaatggg aatcgggtcg 240

ggtattaata attatccaac attaaccggc gttccgtgta ttgaaccggt tcaaaaccgg 300

gttcatgaat cggaggacca ttgttganta agnttaagag agctttgtng aaacaanctt 360

tttangattg atnaccg 377

<210> 85
<211> 508
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...508
<223> n=a, c, g, or t

<400> 85

tgcatacaac gcaccgtttt tcgtaacacg gtttcgcgaa gtctatttca tttctcctcg 60

atttttgaca tgcttgagac aattgtgcca cgagaagacg aagagaggat gttccttgag 120

atggaggtct ttgggagaga ggcactgaat gtaattgctt gcnaaggttg ggaaagagtg 180

gagaggcctg agacatacaa gcagtggcac gtacgggcta tgaggtcagg gttggtgcag 240

gttccatttg acccaagcat tatgaagaca tcgctgcata aggtccacac attctaccac 300

aaggattttg tgatcggtca aagataaccg ggtggctctt tcaaggntgg aaggggaagg 360

anctgtcatg ggtctttctt ttttggaaac cagagtccca aggttttncc ggaaaatcct 420

ccttgggnat ttnangnccc tttttttgtt tttttncccn gnnanttccc nggggnagtt 480

tccagtttna ggngngtttt tncnaaaa 508

<210> 86
<211> 466
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...466
<223> n=a, c, g, or t

<400> 86

tgcatacaac gcaccgtttt tngtaacacg gtttcgcgaa gtctatttna tttctcctcg 60

atttttgaca tgcttganac aattgtncca cgagaagacg aagagaggat gttccttgan 120

atggaggtct ttgggagana ggcactgaat gtaattnctt gcnaaggttg ggaaagagtg 180

gagaggcctg anacatacaa gcagtggcac gtacgggcta tgaggtcagg gttggtgcag 240

gttccatttg acccaagcat tatgaagaca tcgctgcata aggtccacac attctaccac 300

aagggttttt tgatccntcc aagataaccg gtggctcttn caaagctttg aagggaagga 360

cctttcatgg gtcttttctt ttttggaacc aggtcccaag gttttncccg gaatccccgn 420

tggaattttg nnnccccttt tgatttttt tccccggnaa ttnccc 466

<210> 87
<211> 342
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...342
<223> n=a, c, g, or t

<400> 87

gagacggtag atccgncgcg ctaaagcttc ggcgaagtaa gtagccactt tnntnatagc 60

tccggcttga nacacagcta agcatccnat ttgcttcaca agagcttccg ctagagtcaa 120

attgtnctnc tggattgctt ctgcacaagc cataagcgcg tggactaaac gaacaccgtt 180

ctcttgcgag tnaaccagga taacagaacg anttgactca gccgccgccg tcgttgtcgt 240

ggtggttgtc gtcaccgtcg ttcctatgac tccaccaatn tgggtacccg tcgaagtcga 300

tgtaaccata ggatcagggc ttcgngcatg nttttaaaac gg 342

<210> 88
<211> 321
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...321
<223> n=a, c, g, or t

<400> 88

gtttgattcg ttggaaggag ttccgaatag tcaagacaaa gtcatntctg aagtttactt 60

agggaaacag atttgtaatc nggtggcttg tnaagntcct gacagagtcg agagacacga 120

aacgttgagt caatngggaa accggtttgg ttcgtccggt ttagcgccgg cacatcttgg 180

gtctaacgcg tttaagcaag cnagtatnct tttntntgtn tttaatagtg gccaaggtta 240

tcgtgtggag gagagtaatg gatgtttgat gttgggttgg cacactnngc ccactcattt 300

accacctccg gttttggaaa c 321

<210> 89
<211> 490
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...490
<223> n=a, c, g, or t

<400> 89

taaaaattga tcccaaaaag gcataaatta aaaatgacct accaaaacga tatatataag 60

aattttaaac aagtgaacga aaataaataa aataaacaaa aggcaaaacg gttcgattca 120

gttcggttta ggtcttggtc cgaacatatg tcatcaccgg tccactgatc tcaatctcaa 180

attcactcgn ctcgactcca ccaccgtcgt atgcttcgag tcaaactcag tacgncgccg 240

tcgagagttt ccaagcggag gtggtaatga gtggacgagt gtgccaaccc ancatcaaac 300

atccattact ttcctccaca cgntaacctt ggccactatt taaacacagg caaaangcat 360

acttgtttgc ttaaaccgcg ttagnccnaa gntttgccgg gcgntaaacc cggcngaccc 420

aanccggntt tcccnatttg ctcaaacggt ttngtgnctt ttggcttttt gnatggcctt 480

taaangnncc 490

<210> 90
<211> 422
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...422
<223> n=a, c, g, or t

<400> 90

aaaaaatggg aaaccatcac tcttgatgaa cttatgatca atccaggaga gacaacggtc 60

gtcaacngca ttcatcggtt acaatacacn cctgatgaaa ctgtgtcatt agactctcca 120

agagacacgg ttctgaagct attcagagat atcaatcctg acctctttgt gtttgcagag 180

attaacggaa tgtacaactc tcctttcttc atgacgaggt tccgagaagc gcttttncat 240

tacncttcac tctttgacat gtttgacacc acaatacacg gagaggatga gtacaaaaac 300

aggtcactgt ttggagagag agttactttt gaganacgcg nttgagcgtg attttcctgc 360

nngggnttca nancgggttt tnngggcctt aaaacctnca agaaatnggn ggtttgggtt 420

tt 422

<210> 91
<211> 234
<212> DNA
<213> Arabidopsis thaliana

<400> 91

aatcaatgtt ttggttatat ttcattacta gcaacccacc cacaaccaca tgacaattta 60

caagagaaaa acaaccacca ggtttggttt gtatacatat ataacttagg ttgtgttaca 120

acttaaaaca tcattgcaca tcctaaaaat ttcagcgacc agaatgtgtt tttgattgtg 180

cctctttctt tatccacctc aagtaaccat cattcactat aacttaccca atct 234

<210> 92
<211> 466
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...466
<223> n=a, c, g, or t

<400> 92

gcgaatgttg agatcttgga agcaatagct ggggaaacca gagtccacat tatcgatttt 60

aagattgcac agggatcaca atacatgttt ttaattcagg agcttgcgaa acgccctggt 120

gggccgccgt tgctgcgtgt nacgggtgtg gatgattcan agtccaccta tgctcgtggg 180

ggaggactca gcttggtagg tgagaggctt gcaactttgg cgcagtcatg tggtgtcccg 240

tttnagtttc acgatgccat catgtctggg tgcaaggtgc agcgggaaca tctcgggttg 300

gaacctggct ttgctgttgt tgtgaacttc ccatatgtat tacaccacat gccagacgag 360

agcgtaagtt tttgaaaatc acagngacag gcttctgcat ctnatcaana gcctttcccc 420

aaactggtac tctagtaggc aagattcaac acaacacttg catcna 466

<210> 93
<211> 534

<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...534
<223> n=a, c, g, or t

<400> 93

atgnaacata tagcaaaaga tcatgcaatg agtactatat ctcttaggct acactcttac 60

acacgctatg tcacaagcat aatataacaa cattctagtg ttcaagaacc ctaactctga 120

acttaatcca ctcgtgttgg cgagagacta tcaacagaaa agccctacat aaatcccagt 180

cgcttagaac gtaaganaca acatctatga agacgaagga acccatagag atgaagcata 240

cacgattcta cctttccacc cttgaagtaa ccagttaccg ttttgatcaa catcgaagtt 300

tttatcgtac ccgttttcgg attttcaact tcagattctg catcagttcc ttctcaagcg 360

gnagctgtcc taaatccggg tcgggtcagt ctcggctggc actggttata tggctctggg 420

ctctccactc tctctggtct tcacaaggca cancattcac aatctntttt ccataaaact 480

nnttttcntn catnngncnn atnttggctt ccctnggntg gttggggnnc ncnt 534

<210> 94
<211> 476
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> modified_base
<222> 1...476
<223> n=a, c, g, or t

<400> 94

tcaaggttct tctttgtcat cttgttgccg aatccacaaa gaggagaata aagattcgac 60
ctttattaga tattaacgac tctggatttt tgggtttttg gagttggatc cacatgggtt 120

cttatccgga tggattccct ggatccatgg acgagttgga tttcaataag gactttgatt 180

tgcctccctc ctcaaaccaa accttaggtt tagctaatgg gttctattta gatgacttag 240

atttctcatc cttggatcct ccagaggcat atccctccca gaacaacanc aacaacatca 300

tcaacaacaa agctgtagca ggagatctgt tatcatcttc aactgaatga cgntggattc 360

tctgattctg ttttgagtat ataagccaag ttctnatggg agnnggtnat gnagagaagc 420

ctttgtatgt tcatgnngnt ttggtnatta agntgctngg aaannactcn ntnngc 476

<210> 95
<211> 3510
<212> DNA
<213> Zea mays

<220>
<221> CDS
<222> (293)...(1855)

<221> CDS
<222> (2703)...(3143)

<400> 95

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ccggactgac tgactgactg tggtggtggt ggtgcatcag cagcccgcgc ggcgccaaaa 120

cacgcaaact gctccctccc tcactcaccc ctatcccccg cgctgggtcg cccgatcgcc 180

atgcgcgcgg cggcttcctc ttggcgtttc tagatgggct cctcctcctc cctcctcttc 240

tcctcgtcct cctccgccgc atccaccgcc ccccactcct ttccccactc tc atg cca 298
Met Pro
1

ccg cca ccg cct ccg cct cct ctc act cct tat tgc cgc cgc tgc cct 346
Pro Pro Pro Pro Pro Pro Pro Leu Thr Pro Tyr Cys Arg Arg Cys Pro
5 10 15

ccc cca cac ctc cct ccg cct cct cct tct tcc cca aac cac ttc ctc 394
Pro Pro His Leu Pro Pro Pro Pro Pro Ser Ser Pro Asn His Phe Leu
20 25 30

ctc cac tac ctc cat cag cta gac cac caa gaa gcc gcc gcc gcc gcc 442
Leu His Tyr Leu His Gln Leu Asp His Gln Glu Ala Ala Ala Ala Ala
35 40 45 50

atg gtc cgc aag cgc ccc gcg tcc gac atg gac ctc ccg ccg ccg cgc 490
Met Val Arg Lys Arg Pro Ala Ser Asp Met Asp Leu Pro Pro Pro Arg
55 60 65

cgc cac gtc acg ggc gac ctc tcc gac gtc acg gcg gcc gct gcc gcc 538
Arg His Val Thr Gly Asp Leu Ser Asp Val Thr Ala Ala Ala Ala Ala
70 75 80

ggt gtt ggt ggt agt ggc gcg ccg tcc tcc gcc agc gcg cag ctg ccc 586
Gly Val Gly Gly Ser Gly Ala Pro Ser Ser Ala Ser Ala Gln Leu Pro
85 90 95

gcg ctg ccc acc cag ctc cac cag ctg ccc ccc gcg ttc cag cac cac 634
Ala Leu Pro Thr Gln Leu His Gln Leu Pro Pro Ala Phe Gln His His
100 105 110

gcg ccg gag gtg gac gtg ccc gcg cac ccg gcc ccg gcc gcc cac gcg 682
Ala Pro Glu Val Asp Val Pro Ala His Pro Ala Pro Ala Ala His Ala
115 120 125 130

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cag gcg ggc ggc gag gca acc gcg tcc acg acc gcg tgg gtg gac ggc      730
Gln Ala Gly Gly Glu Ala Thr Ala Ser Thr Thr Ala Trp Val Asp Gly
                135                 140                 145

atc atc cgc gac atc atc ggg agc agc ggc ggc gcc gcg gtc tcc atc      778
Ile Ile Arg Asp Ile Ile Gly Ser Ser Gly Gly Ala Ala Val Ser Ile
            150                 155                 160

acg cag ctc atc cac aac gtc cgc gag atc atc cac ccc tgc aac ccc      826
Thr Gln Leu Ile His Asn Val Arg Glu Ile Ile His Pro Cys Asn Pro
        165                 170                 175

ggc ctc gcg tcg ctc ctg gag ctc cgc ctc cgc tcc ctc ctc gca gcc      874
Gly Leu Ala Ser Leu Leu Glu Leu Arg Leu Arg Ser Leu Leu Ala Ala
    180                 185                 190

gac ccg gcc cca ctg ccg ccg ccg ccg cag ccg cag cag cat gct ctc      922
Asp Pro Ala Pro Leu Pro Pro Pro Pro Gln Pro Gln Gln His Ala Leu
195                 200                 205                 210

ctg cac ggc gct ccg gcc gcc gct ccc gcg ggg ctg acg ctc cct ccc      970
Leu His Gly Ala Pro Ala Ala Ala Pro Ala Gly Leu Thr Leu Pro Pro
                215                 220                 225

ccg cca ccg ctt ccg gac aag cgc cgc cac gag cat cca ccg ccg tgc     1018
Pro Pro Pro Leu Pro Asp Lys Arg Arg His Glu His Pro Pro Pro Cys
            230                 235                 240

cag cag caa cag cag gag gaa ccg cat ccg gcg ccg cag tcg ccc aag     1066
Gln Gln Gln Gln Gln Glu Glu Pro His Pro Ala Pro Gln Ser Pro Lys
        245                 250                 255

gcc ccg acc gcg gaa gag acc gca gcg gcg gcc gcc gcc gca caa gca     1114
Ala Pro Thr Ala Glu Glu Thr Ala Ala Ala Ala Ala Ala Ala Gln Ala
    260                 265                 270

gca gct gct gcg gcc gcc aag gag cgg aag gag gag cag cgg cgg aag     1162
Ala Ala Ala Ala Ala Ala Lys Glu Arg Lys Glu Glu Gln Arg Arg Lys
275                 280                 285                 290

cag cgc gac gag gag ggc ctc cac ctg ctg acg ctg ctg ctg cag tgc     1210
Gln Arg Asp Glu Glu Gly Leu His Leu Leu Thr Leu Leu Leu Gln Cys
                295                 300                 305

gcc gag gcc gtg aac gcg gac aac ctg gac gac gcg cac cag acg ctg     1258
Ala Glu Ala Val Asn Ala Asp Asn Leu Asp Asp Ala His Gln Thr Leu
            310                 315                 320

ctg gag atc gcg gag cta gcg acg ccg ttc ggc acc tcg acg cag cgc     1306
Leu Glu Ile Ala Glu Leu Ala Thr Pro Phe Gly Thr Ser Thr Gln Arg
        325                 330                 335

gtg gcc gcc tac ttc gcg gag gcc atg tcg gcg cgg ctc gtc agc tcc     1354
Val Ala Ala Tyr Phe Ala Glu Ala Met Ser Ala Arg Leu Val Ser Ser
    340                 345                 350

tgc ctg ggc ctg tac gcg ccg ctg ccg ccg ggc tcc ccc gcc gcg gcg     1402
Cys Leu Gly Leu Tyr Ala Pro Leu Pro Pro Gly Ser Pro Ala Ala Ala
```

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355                 360                 365                 370

cgc ctc cac ggc cgc gtc gcc gcc gcg ttc cag gtg ttc aac ggc atc     1450
Arg Leu His Gly Arg Val Ala Ala Ala Phe Gln Val Phe Asn Gly Ile
                375                 380                 385

agc ccc ttc gtc aag ttc tcg cac ttc acc gcc aac cag gcc atc cag     1498
Ser Pro Phe Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala Ile Gln
            390                 395                 400

gag gcg ttc gag cgg gag gag cgc gtg cac atc atc gac ctc gac atc     1546
Glu Ala Phe Glu Arg Glu Glu Arg Val His Ile Ile Asp Leu Asp Ile
        405                 410                 415

atg cag ggg ctg cag tgg ccg ggg ctc ttc cac atc ctt gcc tcc cgc     1594
Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala Ser Arg
    420                 425                 430

ccc ggg ggc ccg ccc agg gtg agg ctc acc ggc ctc ggg gcg tcc atg     1642
Pro Gly Gly Pro Pro Arg Val Arg Leu Thr Gly Leu Gly Ala Ser Met
435                 440                 445                 450

gag gcg ctc gag gcc acg ggg aag cgc ctc tcc gat ttc gcc gac acg     1690
Glu Ala Leu Glu Ala Thr Gly Lys Arg Leu Ser Asp Phe Ala Asp Thr
                455                 460                 465

ctc ggc ctg ccc ttc gag ttc tgc gcc gtc gcc gag aag gcc ggc aat     1738
Leu Gly Leu Pro Phe Glu Phe Cys Ala Val Ala Glu Lys Ala Gly Asn
            470                 475                 480

gtt gac ccg gag aag cta ggg gtc acg agg cgg gag gcc gtc gcc gtc     1786
Val Asp Pro Glu Lys Leu Gly Val Thr Arg Arg Glu Ala Val Ala Val
        485                 490                 495

cac tgg ctg cac cac tcg ctc tac gac gtc act ggc tcc gac tcc aac     1834
His Trp Leu His His Ser Leu Tyr Asp Val Thr Gly Ser Asp Ser Asn
    500                 505                 510

acg ctc tgg ctc atc caa agg taggaaggag tacaccatct ctcgatcctg        1885
Thr Leu Trp Leu Ile Gln Arg
515                 520

acttccttgc taccatgtca aatcttgatg caatcatggc cacttttcag ctactaacac   1945

tttagtttag ccaatgcgac atccagtaca actaatctaa aaaaataatc ttcagaggtt   2005

tcctagtaaa aaaaccgcgt ttttggagct caaaaagctt gtcattatga ccaaccaact   2065

ttctaggctt aaaaaggttg aatcttggca atgcttttga gacgatgctg tactgaagta   2125

ctggtagaga gagtatcctc catggccttt gttgatccca gaaccacaaa agatagtatt   2185

tcgctcgcat ttggttagtg gaggtgttct gatcatcact tggaggatgg agctgaaagt   2245

tcctatcatc atgaccaact ttccatggca aaaggtttct agttccaagt ggcaggacga   2305

tgattactga gtgactgaat ggagtaactg tcatcttcta ccactaacca tcatttatta   2365
```

```
atacataaat catcatccgg agcctaaact cagaaaggct aatcaaaagt gcaatctttc   2425

tcaaatggct gccatatgcc agtggtacat gcctggccat tgtacttttt cggtgaacca   2485

tctcgtctca agcatgagat gaaggcctga actgcaatgt ccttgatttg atgcaaccat   2545

tattagaaga aacgctaagc gatgccggtc ctggcaaggg caatgccata tcgtcagaca   2605

gacagggatt cggaatcgaa tggctagctg gtgacaaatc gcacggggat taataaacta   2665

cattggtcat tgattccatc ccccacacac ctgcagg ctg gcc ccc aag gtg gtg    2720
                                          Leu Ala Pro Lys Val Val
                                                      525

aca atg gtg gag cag gac ctg agc cac tcg ggc tcc ttc ctg gcg cgc     2768
Thr Met Val Glu Gln Asp Leu Ser His Ser Gly Ser Phe Leu Ala Arg
        530                 535                 540

ttc gtg gag gcc atc cac tac tac tcg gcg ctg ttc gac tcg ctg gac     2816
Phe Val Glu Ala Ile His Tyr Tyr Ser Ala Leu Phe Asp Ser Leu Asp
    545                 550                 555

gcg agc tac ggc gag gac agc ccc gag cgg cac gtc gtg gag cag cag     2864
Ala Ser Tyr Gly Glu Asp Ser Pro Glu Arg His Val Val Glu Gln Gln
560                 565                 570                 575

ctg ctg tcg cgg gag atc cgc aac gtg ctg gcc gtg ggc ggg ccg gcc     2912
Leu Leu Ser Arg Glu Ile Arg Asn Val Leu Ala Val Gly Gly Pro Ala
                580                 585                 590

cgc acc ggc gac gtc aag ttc ggc agc tgg cgc gag aag ctg gcg cag     2960
Arg Thr Gly Asp Val Lys Phe Gly Ser Trp Arg Glu Lys Leu Ala Gln
            595                 600                 605



tcc ggg ttc cgc gcc gcc tcg ctc gcc ggc agc gcc gcg gcg cag gcg     3008
Ser Gly Phe Arg Ala Ala Ser Leu Ala Gly Ser Ala Ala Ala Gln Ala
        610                 615                 620

tcc ctg ctg ctc ggc atg ttc ccc tcc gac ggg tac acg ctg gtg gag     3056
Ser Leu Leu Leu Gly Met Phe Pro Ser Asp Gly Tyr Thr Leu Val Glu
    625                 630                 635

gag aac ggc gcg ctg aag ctc ggg tgg aag gac ctc tgc ctg ctc acc     3104
Glu Asn Gly Ala Leu Lys Leu Gly Trp Lys Asp Leu Cys Leu Leu Thr
640                 645                 650                 655

gcg tcg gcc tgg cgc ccc atc cag gtg ccg ccg tgc cgt tgatgagacc      3153
Ala Ser Ala Trp Arg Pro Ile Gln Val Pro Pro Cys Arg
                660                 665

tctgcctgct cctgcttgcg ttgagaggcc gccactccac ttgttttgca tctgtagctg   3213

ctcggtttgg tcatcagctg ggagataaga aaagcggaaa cgtactaatt gctctggagt   3273

agatccatcc attcacagtg atagttactg atgtactaag ctttaattag ttcaatgcta   3333
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gatcgttctt gttcaggtgt cgatcgcgta tccttgtcct tggtctcctt ttcattttgg 3393

tgctttgtct agtcgctttc ccgactaatg ccgtgctctt catgcgcgtt ctagtgaaga 3453

ttcttgccga gaatattagc atagttttca tgtaaagtag ccatcaagca agtatta 3510

<210> 96
<211> 668
<212> PRT
<213> Zea mays

<400> 96

Met Pro Pro Pro Pro Pro Pro Pro Pro Leu Thr Pro Tyr Cys Arg Arg
1 5 10 15

Cys Pro Pro Pro His Leu Pro Pro Pro Pro Pro Ser Ser Pro Asn His
20 25 30

Phe Leu Leu His Tyr Leu His Gln Leu Asp His Gln Glu Ala Ala Ala
35 40 45

Ala Ala Met Val Arg Lys Arg Pro Ala Ser Asp Met Asp Leu Pro Pro
50 55 60

Pro Arg Arg His Val Thr Gly Asp Leu Ser Asp Val Thr Ala Ala Ala
65 70 75 80

Ala Ala Gly Val Gly Gly Ser Gly Ala Pro Ser Ser Ala Ser Ala Gln
85 90 95

Leu Pro Ala Leu Pro Thr Gln Leu His Gln Leu Pro Pro Ala Phe Gln
100 105 110

His His Ala Pro Glu Val Asp Val Pro Ala His Pro Ala Pro Ala Ala
115 120 125

His Ala Gln Ala Gly Gly Glu Ala Thr Ala Ser Thr Thr Ala Trp Val
130 135 140

Asp Gly Ile Ile Arg Asp Ile Ile Gly Ser Ser Gly Gly Ala Ala Val
145 150 155 160

Ser Ile Thr Gln Leu Ile His Asn Val Arg Glu Ile Ile His Pro Cys
165 170 175

Asn Pro Gly Leu Ala Ser Leu Leu Glu Leu Arg Leu Arg Ser Leu Leu
180 185 190

Ala Ala Asp Pro Ala Pro Leu Pro Pro Pro Pro Gln Pro Gln Gln His
195 200 205

Ala Leu Leu His Gly Ala Pro Ala Ala Ala Pro Ala Gly Leu Thr Leu
210 215 220

Pro Pro Pro Pro Pro Leu Pro Asp Lys Arg Arg His Glu His Pro Pro
225 230 235 240

```
Pro Cys Gln Gln Gln Gln Gln Glu Glu Pro His Pro Ala Pro Gln Ser
                245                 250                 255

Pro Lys Ala Pro Thr Ala Glu Glu Thr Ala Ala Ala Ala Ala Ala Ala
            260                 265                 270

Gln Ala Ala Ala Ala Ala Ala Ala Lys Glu Arg Lys Glu Glu Gln Arg
        275                 280                 285

Arg Lys Gln Arg Asp Glu Glu Gly Leu His Leu Leu Thr Leu Leu Leu
    290                 295                 300

Gln Cys Ala Glu Ala Val Asn Ala Asp Asn Leu Asp Asp Ala His Gln
305                 310                 315                 320

Thr Leu Leu Glu Ile Ala Glu Leu Ala Thr Pro Phe Gly Thr Ser Thr
                325                 330                 335

Gln Arg Val Ala Ala Tyr Phe Ala Glu Ala Met Ser Ala Arg Leu Val
            340                 345                 350

Ser Ser Cys Leu Gly Leu Tyr Ala Pro Leu Pro Pro Gly Ser Pro Ala
        355                 360                 365

Ala Ala Arg Leu His Gly Arg Val Ala Ala Ala Phe Gln Val Phe Asn
    370                 375                 380

Gly Ile Ser Pro Phe Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala
385                 390                 395                 400

Ile Gln Glu Ala Phe Glu Arg Glu Glu Arg Val His Ile Ile Asp Leu
                405                 410                 415

Asp Ile Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala
            420                 425                 430

Ser Arg Pro Gly Gly Pro Pro Arg Val Arg Leu Thr Gly Leu Gly Ala
        435                 440                 445

Ser Met Glu Ala Leu Glu Ala Thr Gly Lys Arg Leu Ser Asp Phe Ala
    450                 455                 460

Asp Thr Leu Gly Leu Pro Phe Glu Phe Cys Ala Val Ala Glu Lys Ala
465                 470                 475                 480

Gly Asn Val Asp Pro Glu Lys Leu Gly Val Thr Arg Arg Glu Ala Val
                485                 490                 495

Ala Val His Trp Leu His His Ser Leu Tyr Asp Val Thr Gly Ser Asp
            500                 505                 510

Ser Asn Thr Leu Trp Leu Ile Gln Arg Leu Ala Pro Lys Val Val Thr
        515                 520                 525

Met Val Glu Gln Asp Leu Ser His Ser Gly Ser Phe Leu Ala Arg Phe
    530                 535                 540

Val Glu Ala Ile His Tyr Tyr Ser Ala Leu Phe Asp Ser Leu Asp Ala
```

545 550 555 560

Ser Tyr Gly Glu Asp Ser Pro Glu Arg His Val Val Glu Gln Gln Leu
565 570 575

Leu Ser Arg Glu Ile Arg Asn Val Leu Ala Val Gly Gly Pro Ala Arg
580 585 590

Thr Gly Asp Val Lys Phe Gly Ser Trp Arg Glu Lys Leu Ala Gln Ser
595 600 605

Gly Phe Arg Ala Ala Ser Leu Ala Gly Ser Ala Ala Ala Gln Ala Ser
610 615 620

Leu Leu Leu Gly Met Phe Pro Ser Asp Gly Tyr Thr Leu Val Glu Glu
625 630 635 640

Asn Gly Ala Leu Lys Leu Gly Trp Lys Asp Leu Cys Leu Leu Thr Ala
645 650 655

Ser Ala Trp Arg Pro Ile Gln Val Pro Pro Cys Arg
660 665

<210> 97
<211> 521
<212> PRT
<213> Zea mays

<400> 97

Met Pro Pro Pro Pro Pro Pro Pro Pro Leu Thr Pro Tyr Cys Arg Arg
1 5 10 15

Cys Pro Pro Pro His Leu Pro Pro Pro Pro Pro Ser Ser Pro Asn His
20 25 30

Phe Leu Leu His Tyr Leu His Gln Leu Asp His Gln Glu Ala Ala Ala
35 40 45

Ala Ala Met Val Arg Lys Arg Pro Ala Ser Asp Met Asp Leu Pro Pro
50 55 60

Pro Arg Arg His Val Thr Gly Asp Leu Ser Asp Val Thr Ala Ala Ala
65 70 75 80

Ala Ala Gly Val Gly Gly Ser Gly Ala Pro Ser Ser Ala Ser Ala Gln
85 90 95

Leu Pro Ala Leu Pro Thr Gln Leu His Gln Leu Pro Pro Ala Phe Gln
100 105 110

His His Ala Pro Glu Val Asp Val Pro Ala His Pro Ala Pro Ala Ala
115 120 125

His Ala Gln Ala Gly Gly Glu Ala Thr Ala Ser Thr Thr Ala Trp Val
130 135 140

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Asp Gly Ile Ile Arg Asp Ile Ile Gly Ser Ser Gly Gly Ala Ala Val
145                 150                 155                 160

Ser Ile Thr Gln Leu Ile His Asn Val Arg Glu Ile Ile His Pro Cys
                165                 170                 175

Asn Pro Gly Leu Ala Ser Leu Leu Glu Leu Arg Leu Arg Ser Leu Leu
            180                 185                 190

Ala Ala Asp Pro Ala Pro Leu Pro Pro Pro Pro Gln Pro Gln Gln His
        195                 200                 205

Ala Leu Leu His Gly Ala Pro Ala Ala Ala Pro Ala Gly Leu Thr Leu
    210                 215                 220

Pro Pro Pro Pro Pro Leu Pro Asp Lys Arg Arg His Glu His Pro Pro
225                 230                 235                 240

Pro Cys Gln Gln Gln Gln Gln Glu Glu Pro His Pro Ala Pro Gln Ser
                245                 250                 255

Pro Lys Ala Pro Thr Ala Glu Glu Thr Ala Ala Ala Ala Ala Ala Ala
            260                 265                 270

Gln Ala Ala Ala Ala Ala Ala Ala Lys Glu Arg Lys Glu Glu Gln Arg
        275                 280                 285

Arg Lys Gln Arg Asp Glu Glu Gly Leu His Leu Leu Thr Leu Leu Leu
    290                 295                 300

Gln Cys Ala Glu Ala Val Asn Ala Asp Asn Leu Asp Asp Ala His Gln
305                 310                 315                 320

Thr Leu Leu Glu Ile Ala Glu Leu Ala Thr Pro Phe Gly Thr Ser Thr
                325                 330                 335

Gln Arg Val Ala Ala Tyr Phe Ala Glu Ala Met Ser Ala Arg Leu Val
            340                 345                 350

Ser Ser Cys Leu Gly Leu Tyr Ala Pro Leu Pro Pro Gly Ser Pro Ala
        355                 360                 365

Ala Ala Arg Leu His Gly Arg Val Ala Ala Ala Phe Gln Val Phe Asn
    370                 375                 380

Gly Ile Ser Pro Phe Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala
385                 390                 395                 400

Ile Gln Glu Ala Phe Glu Arg Glu Glu Arg Val His Ile Ile Asp Leu
                405                 410                 415

Asp Ile Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala
            420                 425                 430

Ser Arg Pro Gly Gly Pro Pro Arg Val Arg Leu Thr Gly Leu Gly Ala
        435                 440                 445

Ser Met Glu Ala Leu Glu Ala Thr Gly Lys Arg Leu Ser Asp Phe Ala
```

```
    450                 455                 460

Asp Thr Leu Gly Leu Pro Phe Glu Phe Cys Ala Val Ala Glu Lys Ala
465                 470                 475                 480

Gly Asn Val Asp Pro Glu Lys Leu Gly Val Thr Arg Arg Glu Ala Val
                485                 490                 495

Ala Val His Trp Leu His His Ser Leu Tyr Asp Val Thr Gly Ser Asp
            500                 505                 510

Ser Asn Thr Leu Trp Leu Ile Gln Arg
        515                 520


<210> 98
<211> 147
<212> PRT
<213> Zea mays

<400> 98

Leu Ala Pro Lys Val Val Thr Met Val Glu Gln Asp Leu Ser His Ser
 1               5                  10                  15

Gly Ser Phe Leu Ala Arg Phe Val Glu Ala Ile His Tyr Tyr Ser Ala
            20                  25                  30

Leu Phe Asp Ser Leu Asp Ala Ser Tyr Gly Glu Asp Ser Pro Glu Arg
        35                  40                  45

His Val Val Glu Gln Gln Leu Leu Ser Arg Glu Ile Arg Asn Val Leu
    50                  55                  60

Ala Val Gly Gly Pro Ala Arg Thr Gly Asp Val Lys Phe Gly Ser Trp
65                  70                  75                  80

Arg Glu Lys Leu Ala Gln Ser Gly Phe Arg Ala Ala Ser Leu Ala Gly
                85                  90                  95

Ser Ala Ala Ala Gln Ala Ser Leu Leu Leu Gly Met Phe Pro Ser Asp
            100                 105                 110

Gly Tyr Thr Leu Val Glu Glu Asn Gly Ala Leu Lys Leu Gly Trp Lys
        115                 120                 125

Asp Leu Cys Leu Leu Thr Ala Ser Ala Trp Arg Pro Ile Gln Val Pro
    130                 135                 140

Pro Cys Arg
145


<210> 99
<211> 668
<212> PRT
<213> Zea mays
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<400> 99

```
Met Pro Pro Pro Pro Pro Pro Pro Pro Leu Thr Pro Tyr Cys Arg Arg
 1               5                  10                  15

Cys Pro Pro Pro His Leu Pro Pro Pro Pro Pro Ser Ser Pro Asn His
            20                  25                  30

Phe Leu Leu His Tyr Leu His Gln Leu Asp His Gln Glu Ala Ala Ala
        35                  40                  45

Ala Ala Met Val Arg Lys Arg Pro Ala Ser Asp Met Asp Leu Pro Pro
    50                  55                  60

Pro Arg Arg His Val Thr Gly Asp Leu Ser Asp Val Thr Ala Ala Ala
65                  70                  75                  80

Ala Ala Gly Val Gly Gly Ser Gly Ala Pro Ser Ser Ala Ser Ala Gln
                85                  90                  95

Leu Pro Ala Leu Pro Thr Gln Leu His Gln Leu Pro Pro Ala Phe Gln
            100                 105                 110

His His Ala Pro Glu Val Asp Val Pro Ala His Pro Ala Pro Ala Ala
        115                 120                 125

His Ala Gln Ala Gly Gly Glu Ala Thr Ala Ser Thr Thr Ala Trp Val
    130                 135                 140

Asp Gly Ile Ile Arg Asp Ile Ile Gly Ser Ser Gly Gly Ala Ala Val
145                 150                 155                 160

Ser Ile Thr Gln Leu Ile His Asn Val Arg Glu Ile Ile His Pro Cys
                165                 170                 175

Asn Pro Gly Leu Ala Ser Leu Leu Glu Leu Arg Leu Arg Ser Leu Leu
            180                 185                 190

Ala Ala Asp Pro Ala Pro Leu Pro Pro Pro Pro Gln Pro Gln Gln His
        195                 200                 205

Ala Leu Leu His Gly Ala Pro Ala Ala Ala Pro Ala Gly Leu Thr Leu
    210                 215                 220

Pro Pro Pro Pro Pro Leu Pro Asp Lys Arg Arg His Glu His Pro Pro
225                 230                 235                 240

Pro Cys Gln Gln Gln Gln Gln Glu Glu Pro His Pro Ala Pro Gln Ser
                245                 250                 255

Pro Lys Ala Pro Thr Ala Glu Glu Thr Ala Ala Ala Ala Ala Ala Ala
            260                 265                 270

Gln Ala Ala Ala Ala Ala Ala Ala Lys Glu Arg Lys Glu Glu Gln Arg
        275                 280                 285

Arg Lys Gln Arg Asp Glu Glu Gly Leu His Leu Leu Thr Leu Leu Leu
    290                 295                 300
```

```
Gln Cys Ala Glu Ala Val Asn Ala Asp Asn Leu Asp Asp Ala His Gln
305                 310                 315                 320

Thr Leu Leu Glu Ile Ala Glu Leu Ala Thr Pro Phe Gly Thr Ser Thr
                325                 330                 335

Gln Arg Val Ala Ala Tyr Phe Ala Glu Ala Met Ser Ala Arg Leu Val
            340                 345                 350

Ser Ser Cys Leu Gly Leu Tyr Ala Pro Leu Pro Pro Gly Ser Pro Ala
        355                 360                 365

Ala Ala Arg Leu His Gly Arg Val Ala Ala Ala Phe Gln Val Phe Asn
    370                 375                 380

Gly Ile Ser Pro Phe Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala
385                 390                 395                 400

Ile Gln Glu Ala Phe Glu Arg Glu Glu Arg Val His Ile Ile Asp Leu
                405                 410                 415

Asp Ile Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala
            420                 425                 430

Ser Arg Pro Gly Gly Pro Pro Arg Val Arg Leu Thr Gly Leu Gly Ala
        435                 440                 445

Ser Met Glu Ala Leu Glu Ala Thr Gly Lys Arg Leu Ser Asp Phe Ala
    450                 455                 460

Asp Thr Leu Gly Leu Pro Phe Glu Phe Cys Ala Val Ala Glu Lys Ala
465                 470                 475                 480

Gly Asn Val Asp Pro Glu Lys Leu Gly Val Thr Arg Arg Glu Ala Val
                485                 490                 495

Ala Val His Trp Leu His His Ser Leu Tyr Asp Val Thr Gly Ser Asp
            500                 505                 510

Ser Asn Thr Leu Trp Leu Ile Gln Arg Leu Ala Pro Lys Val Val Thr
        515                 520                 525

Met Val Glu Gln Asp Leu Ser His Ser Gly Ser Phe Leu Ala Arg Phe
    530                 535                 540

Val Glu Ala Ile His Tyr Tyr Ser Ala Leu Phe Asp Ser Leu Asp Ala
545                 550                 555                 560

Ser Tyr Gly Glu Asp Ser Pro Glu Arg His Val Val Glu Gln Gln Leu
                565                 570                 575

Leu Ser Arg Glu Ile Arg Asn Val Leu Ala Val Gly Gly Pro Ala Arg
            580                 585                 590

Thr Gly Asp Val Lys Phe Gly Ser Trp Arg Glu Lys Leu Ala Gln Ser
        595                 600                 605

Gly Phe Arg Ala Ala Ser Leu Ala Gly Ser Ala Ala Ala Gln Ala Ser
```

610 615 620

Leu Leu Leu Gly Met Phe Pro Ser Asp Gly Tyr Thr Leu Val Glu Glu
625 630 635 640

Asn Gly Ala Leu Lys Leu Gly Trp Lys Asp Leu Cys Leu Leu Thr Ala
645 650 655

Ser Ala Trp Arg Pro Ile Gln Val Pro Pro Cys Arg
660 665

<210> 100
<211> 653
<212> PRT
<213> Arabidopsis thaliana

<400> 100

Met Ala Glu Ser Gly Asp Phe Asn Gly Gly Gln Pro Pro Pro His Ser
1 5 10 15

Pro Leu Arg Thr Thr Ser Ser Gly Ser Ser Ser Ser Asn Asn Arg Gly
20 25 30

Pro Pro Pro Pro Pro Pro Pro Pro Leu Val Met Val Arg Lys Arg Leu
35 40 45

Ala Ser Glu Met Ser Ser Asn Pro Asp Tyr Asn Asn Ser Ser Arg Pro
50 55 60

Pro Arg Arg Val Ser His Leu Leu Asp Ser Asn Tyr Asn Thr Val Thr
65 70 75 80

Pro Gln Gln Pro Pro Ser Leu Thr Ala Ala Ala Thr Val Ser Ser Gln
85 90 95

Pro Asn Pro Pro Leu Ser Val Cys Gly Phe Ser Gly Leu Pro Val Phe
100 105 110

Pro Ser Asp Arg Gly Gly Arg Asn Val Met Met Ser Val Gln Pro Met
115 120 125

Asp Gln Asp Ser Ser Ser Ser Ser Ala Ser Pro Thr Val Trp Val Asp
130 135 140

Ala Ile Ile Arg Asp Leu Ile His Ser Ser Thr Ser Val Ser Ile Pro
145 150 155 160

Gln Leu Ile Gln Asn Val Arg Asp Ile Ile Phe Pro Cys Asn Pro Asn
165 170 175

Leu Gly Ala Leu Leu Glu Tyr Arg Leu Arg Ser Leu Met Leu Leu Asp
180 185 190

Pro Ser Ser Ser Ser Asp Pro Ser Pro Gln Thr Phe Glu Pro Leu Tyr
195 200 205

```
Gln Ile Ser Asn Asn Pro Ser Pro Pro Gln Gln Gln Gln His Gln
    210                 215                 220

Gln Gln Gln Gln Gln His Lys Pro Pro Pro Pro Pro Ile Gln Gln Gln
225                 230                 235                 240

Glu Arg Glu Asn Ser Ser Thr Asp Ala Pro Pro Gln Pro Glu Thr Val
                245                 250                 255

Thr Ala Thr Val Pro Ala Val Gln Thr Asn Thr Ala Glu Ala Leu Arg
            260                 265                 270

Glu Arg Lys Glu Glu Ile Lys Arg Gln Lys Gln Asp Glu Glu Gly Leu
        275                 280                 285

His Leu Leu Thr Leu Leu Leu Gln Cys Ala Glu Ala Val Ser Ala Asp
    290                 295                 300

Asn Leu Glu Glu Ala Asn Lys Leu Leu Leu Glu Ile Ser Gln Leu Ser
305                 310                 315                 320

Thr Pro Tyr Gly Thr Ser Ala Gln Arg Val Ala Ala Tyr Phe Ser Glu
                325                 330                 335

Ala Met Ser Ala Arg Leu Leu Asn Ser Cys Leu Gly Ile Tyr Ala Ala
            340                 345                 350

Leu Pro Ser Arg Trp Met Pro Gln Thr His Ser Leu Lys Met Val Ser
        355                 360                 365

Ala Phe Gln Val Phe Asn Gly Ile Ser Pro Leu Val Lys Phe Ser His
    370                 375                 380

Phe Thr Ala Asn Gln Ala Ile Gln Glu Ala Phe Glu Lys Glu Asp Ser
385                 390                 395                 400

Val His Ile Ile Asp Leu Asp Ile Met Gln Gly Leu Gln Trp Pro Gly
                405                 410                 415

Leu Phe His Ile Leu Ala Ser Arg Pro Gly Gly Pro Pro His Val Arg
            420                 425                 430

Leu Thr Gly Leu Gly Thr Ser Met Glu Ala Leu Gln Ala Thr Gly Lys
        435                 440                 445

Arg Leu Ser Asp Phe Thr Asp Lys Leu Gly Leu Pro Phe Glu Phe Cys
    450                 455                 460

Pro Leu Ala Glu Lys Val Gly Asn Leu Asp Thr Glu Arg Leu Asn Val
465                 470                 475                 480

Arg Lys Arg Glu Ala Val Ala Val His Trp Leu Gln His Ser Leu Tyr
                485                 490                 495

Asp Val Thr Gly Ser Asp Ala His Thr Leu Trp Leu Leu Gln Arg Leu
            500                 505                 510

Ala Pro Lys Val Val Thr Val Val Glu Gln Asp Leu Ser His Ala Gly
```

```
        515                 520                 525

Ser Phe Leu Gly Arg Phe Val Glu Ala Ile His Tyr Tyr Ser Ala Leu
    530                 535                 540

Phe Asp Ser Leu Gly Ala Ser Tyr Gly Glu Glu Ser Glu Glu Arg His
545                 550                 555                 560

Val Val Glu Gln Gln Leu Leu Ser Lys Glu Ile Arg Asn Val Leu Ala
                565                 570                 575

Val Gly Gly Pro Ser Arg Ser Gly Glu Val Lys Phe Glu Ser Trp Arg
            580                 585                 590

Glu Lys Met Gln Gln Cys Gly Phe Lys Gly Ile Ser Leu Ala Gly Asn
        595                 600                 605

Ala Ala Thr Gln Ala Thr Leu Leu Leu Gly Met Phe Pro Ser Asp Gly
    610                 615                 620

Tyr Thr Leu Val Asp Asp Asn Gly Thr Leu Lys Leu Gly Trp Lys Asp
625                 630                 635                 640

Leu Ser Leu Leu Thr Ala Ser Ala Trp Thr Pro Arg Ser
                645                 650
```

<210> 101
<211> 295
<212> PRT
<213> Zea mays

<400> 101

```
Gly Arg Val Ala Ala Ala Phe Gln Val Phe Asn Gly Ile Ser Pro Phe
 1               5                  10                  15

Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala Ile Gln Glu Ala Phe
            20                  25                  30

Glu Arg Glu Glu Arg Val His Ile Ile Asp Leu Asp Ile Met Gln Gly
        35                  40                  45

Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala Ser Arg Pro Gly Gly
    50                  55                  60

Pro Pro Arg Val Arg Leu Thr Gly Leu Gly Ala Ser Met Glu Ala Leu
65                  70                  75                  80

Glu Ala Thr Gly Lys Arg Leu Ser Asp Phe Ala Asp Thr Leu Gly Leu
                85                  90                  95

Pro Phe Glu Phe Cys Ala Val Ala Glu Lys Ala Gly Asn Val Asp Pro
            100                 105                 110

Glu Lys Leu Gly Val Thr Arg Arg Glu Ala Val Ala Val His Trp Leu
        115                 120                 125
```

```
His His Ser Leu Tyr Asp Val Thr Gly Ser Asp Ser Asn Thr Leu Trp
    130                 135                 140

Leu Ile Gln Arg Leu Ala Pro Lys Val Val Thr Met Val Glu Gln Asp
145                 150                 155                 160

Leu Ser His Ser Gly Ser Phe Leu Ala Arg Phe Val Glu Ala Ile His
                165                 170                 175

Tyr Tyr Ser Ala Leu Phe Asp Ser Leu Asp Ala Ser Tyr Gly Glu Asp
            180                 185                 190

Ser Pro Glu Arg His Val Val Glu Gln Gln Leu Leu Ser Arg Glu Ile
        195                 200                 205

Arg Asn Val Leu Ala Val Gly Gly Pro Ala Arg Thr Gly Asp Val Lys
    210                 215                 220

Phe Gly Ser Trp Arg Glu Lys Leu Ala Gln Ser Gly Phe Arg Ala Ala
225                 230                 235                 240

Ser Leu Ala Gly Ser Ala Ala Ala Gln Ala Ser Leu Leu Leu Gly Met
                245                 250                 255

Phe Pro Ser Asp Gly Tyr Thr Leu Val Glu Glu Asn Gly Ala Leu Lys
            260                 265                 270

Leu Gly Trp Lys Asp Leu Cys Leu Leu Thr Ala Ser Ala Trp Arg Pro
        275                 280                 285

Ile Gln Val Pro Pro Cys Arg
    290                 295
```

<210> 102
<211> 308
<212> PRT
<213> Zea mays

<400> 102

```
Arg Arg Val Ala Val Ala Phe Gln Ala Tyr Asn Ala Leu Ser Pro Leu
 1               5                  10                  15

Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala Ile Leu Gln Ala Leu
            20                  25                  30

Asp Gly Glu Asp Cys Leu His Val Ile Asp Leu Asp Ile Met Gln Gly
        35                  40                  45

Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala Ser Arg Pro Arg Lys
    50                  55                  60

Pro Arg Ser Leu Arg Ile Thr Gly Leu Gly Ala Ser Leu Asp Val Leu
65                  70                  75                  80

Glu Ala Thr Gly Arg Arg Leu Ala Asp Phe Ala Ala Ser Leu Gly Leu
                85                  90                  95
```

```
Pro Phe Glu Phe Arg Pro Ile Glu Gly Lys Ile Gly His Val Ala Asp
            100                 105                 110

Ala Ala Ala Leu Leu Gly Ser Arg Gln Arg Arg Arg Asp Asp Glu Ala
        115                 120                 125

Thr Val Val His Trp Met His His Cys Leu Tyr Asp Val Thr Gly Ser
    130                 135                 140

Asp Val Gly Thr Val Arg Leu Leu Arg Ser Leu Arg Pro Lys Leu Ile
145                 150                 155                 160

Thr Ile Val Glu Gln Asp Leu Gly His Ser Gly Asp Phe Leu Gly Arg
                165                 170                 175

Phe Val Glu Ala Leu His Tyr Tyr Ser Ala Leu Phe Asp Ala Leu Gly
            180                 185                 190

Asp Gly Ala Gly Ala Ala Glu Glu Glu Ser Ala Glu Arg Tyr Ala Val
        195                 200                 205

Glu Arg Gln Leu Leu Gly Ala Glu Ile Arg Asn Ile Val Ala Val Gly
    210                 215                 220

Gly Pro Lys Arg Thr Gly Glu Val Arg Val Glu Arg Trp Ser His Glu
225                 230                 235                 240

Leu Arg His Ala Gly Phe Arg Pro Val Ser Leu Ala Gly Ser Pro Ala
                245                 250                 255

Ala Gln Ala Arg Leu Leu Leu Gly Met Tyr Pro Trp Lys Gly Tyr Thr
            260                 265                 270

Leu Val Glu Glu Asp Ala Cys Leu Lys Leu Gly Trp Lys Asp Leu Ser
        275                 280                 285

Leu Leu Thr Ala Ser Ala Trp Glu Pro Ala Asp Asp Ala Ala Ala Ser
    290                 295                 300

Ala Pro Thr Gly
305
```

<210> 103
<211> 290
<212> PRT
<213> Arabidopsis thaliana

<400> 103

```
Leu Lys Met Val Ser Ala Phe Gln Val Phe Asn Gly Ile Ser Pro Leu
 1               5                  10                  15

Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala Ile Gln Glu Ala Phe
            20                  25                  30

Glu Lys Glu Asp Ser Val His Ile Ile Asp Leu Asp Ile Met Gln Gly
        35                  40                  45
```

```
Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala Ser Arg Pro Gly Gly
    50                  55                  60

Pro Pro His Val Arg Leu Thr Gly Leu Gly Thr Ser Met Glu Ala Leu
65                  70                  75                  80

Gln Ala Thr Gly Lys Arg Leu Ser Asp Phe Thr Asp Lys Leu Gly Leu
                85                  90                  95

Pro Phe Glu Phe Cys Pro Leu Ala Glu Lys Val Gly Asn Leu Asp Thr
            100                 105                 110

Glu Arg Leu Asn Val Arg Lys Arg Glu Ala Val Ala Val His Trp Leu
        115                 120                 125

Gln His Ser Leu Tyr Asp Val Thr Gly Ser Asp Ala His Thr Leu Trp
    130                 135                 140

Leu Leu Gln Arg Leu Ala Pro Lys Val Val Thr Val Val Glu Gln Asp
145                 150                 155                 160

Leu Ser His Ala Gly Ser Phe Leu Gly Arg Phe Val Glu Ala Ile His
                165                 170                 175

Tyr Tyr Ser Ala Leu Phe Asp Ser Leu Gly Ala Ser Tyr Gly Glu Glu
            180                 185                 190

Ser Glu Glu Arg His Val Val Glu Gln Gln Leu Leu Ser Lys Glu Ile
        195                 200                 205

Arg Asn Val Leu Ala Val Gly Gly Pro Ser Arg Ser Gly Glu Val Lys
    210                 215                 220

Phe Glu Ser Trp Arg Glu Lys Met Gln Gln Cys Gly Phe Lys Gly Ile
225                 230                 235                 240

Ser Leu Ala Gly Asn Ala Ala Thr Gln Ala Thr Leu Leu Leu Gly Met
                245                 250                 255

Phe Pro Ser Asp Gly Tyr Thr Leu Val Asp Asp Asn Gly Thr Leu Lys
            260                 265                 270

Leu Gly Trp Lys Asp Leu Ser Leu Leu Thr Ala Ser Ala Trp Thr Pro
        275                 280                 285

Arg Ser
    290
```

<210> 104
<211> 969
<212> DNA
<213> Zea mays

<400> 104

gcggccgcgc agagccgccg cgtggcggtg gcgttccagg cgtacaacgc gctgtcgccg 60

ctcgtcaagt tctcgcactt cacggccaac caggccatcc tgcaggcgct cgacggcgag 120

gactgcctcc acgtgatcga cctggacatc atgcagggcc tgcagtggcc ggggctcttc 180

cacatcctcg cgtcccgccc gcgcaagccg cggtcgctcc ggatcaccgg gctcggcgcg 240

tcgctcgacg tcctcgaggc cactggccgc cgcctcgccg acttcgcggc ctcgctcggc 300

ctcccgttcg agttccgccc catcgagggg aagatcgggc acgtcgccga cgccgcggcg 360

ctcctcggct cgcgccagcg gcggcgggat gacgaggcca ccgtggtgca ctggatgcac 420

cactgcctct atgacgtgac ggggtcggac gtgggcacgg tgcggctgct ccggagcctg 480

cgcccgaagc tgatcaccat cgtggagcag gacctgggcc acagcggcga tttcctgggc 540

cggttcgtgg aggcgctgca ctactactcg gcgctgttcg acgcgctggg agacggcgcc 600

ggcgcggccg aggaggagtc ggccgagcgg tacgcggttg agcgacagct cctgggcgcg 660

gagatacgca acatcgtggc cgtaggggcg cccaagcgga caggggaggt gcgcgtggag 720

cggtggagcc acgaactgcg gcacgccggg ttccggccag tgtccctggc cgggagccct 780

gccgcgcagg ccaggctgct cctcggcatg tatccgtgga aggggtacac gctggtggag 840

gaggacgcgt gccttaagct gggctggaag gacctctccc tgctcaccgc gtcggcgtgg 900

gagccggcgg acgacgctgc cgcttctgcg cccaccggtt aacgagtacg agcggacgcg 960

tgggtcgac 969

<210> 105
<211> 323
<212> PRT
<213> Zea mays

<220>
<221> SITE
<222> 1...323
<223> Xaa=unknown amino acid

<400> 105

Ala Ala Ala Gln Ser Arg Arg Val Ala Val Ala Phe Gln Ala Tyr Asn
1 5 10 15

Ala Leu Ser Pro Leu Val Lys Phe Ser His Phe Thr Ala Asn Gln Ala
20 25 30

Ile Leu Gln Ala Leu Asp Gly Glu Asp Cys Leu His Val Ile Asp Leu
35 40 45

Asp Ile Met Gln Gly Leu Gln Trp Pro Gly Leu Phe His Ile Leu Ala
50 55 60

```
Ser Arg Pro Arg Lys Pro Arg Ser Leu Arg Ile Thr Gly Leu Gly Ala
65                  70                  75                  80

Ser Leu Asp Val Leu Glu Ala Thr Gly Arg Arg Leu Ala Asp Phe Ala
                85                  90                  95

Ala Ser Leu Gly Leu Pro Phe Glu Phe Arg Pro Ile Glu Gly Lys Ile
            100                 105                 110

Gly His Val Ala Asp Ala Ala Ala Leu Leu Gly Ser Arg Gln Arg Arg
        115                 120                 125

Arg Asp Asp Glu Ala Thr Val Val His Trp Met His His Cys Leu Tyr
    130                 135                 140

Asp Val Thr Gly Ser Asp Val Gly Thr Val Arg Leu Leu Arg Ser Leu
145                 150                 155                 160

Arg Pro Lys Leu Ile Thr Ile Val Glu Gln Asp Leu Gly His Ser Gly
                165                 170                 175

Asp Phe Leu Gly Arg Phe Val Glu Ala Leu His Tyr Tyr Ser Ala Leu
            180                 185                 190

Phe Asp Ala Leu Gly Asp Gly Ala Gly Ala Ala Glu Glu Glu Ser Ala
        195                 200                 205

Glu Arg Tyr Ala Val Glu Arg Gln Leu Leu Gly Ala Glu Ile Arg Asn
    210                 215                 220

Ile Val Ala Val Gly Gly Pro Lys Arg Thr Gly Glu Val Arg Val Glu
225                 230                 235                 240

Arg Trp Ser His Glu Leu Arg His Ala Gly Phe Arg Pro Val Ser Leu
                245                 250                 255

Ala Gly Ser Pro Ala Ala Gln Ala Arg Leu Leu Leu Gly Met Tyr Pro
            260                 265                 270

Trp Lys Gly Tyr Thr Leu Val Glu Glu Asp Ala Cys Leu Lys Leu Gly
        275                 280                 285

Trp Lys Asp Leu Ser Leu Leu Thr Ala Ser Ala Trp Glu Pro Ala Asp
    290                 295                 300

Asp Ala Ala Ala Ser Ala Pro Thr Gly Xaa Arg Val Arg Ala Asp Ala
305                 310                 315                 320

Trp Val Asp
```

<210> 106
<211> 352
<212> PRT
<213> Zea mays

<400> 106

```
Leu Ser Met Val Asn Glu Leu Arg Gln Ile Val Ser Ile Gln Gly Asp
 1               5                  10                  15

Pro Ser Gln Arg Ile Ala Ala Tyr Met Val Glu Gly Leu Ala Ala Arg
            20                  25                  30

Met Ala Ala Ser Gly Lys Phe Ile Tyr Arg Ala Leu Lys Cys Lys Glu
        35                  40                  45

Pro Pro Ser Asp Glu Arg Leu Ala Ala Met Gln Val Leu Phe Glu Val
    50                  55                  60

Cys Pro Cys Phe Lys Phe Gly Phe Leu Ala Ala Asn Gly Ala Ile Leu
65                  70                  75                  80

Glu Ala Ile Lys Gly Glu Glu Glu Val His Ile Ile Asp Phe Asp Ile
                85                  90                  95

Asn Gln Gly Asn Gln Tyr Met Thr Leu Ile Arg Ser Ile Ala Glu Leu
            100                 105                 110

Pro Gly Lys Arg Pro Arg Leu Arg Leu Thr Gly Ile Asp Asp Pro Glu
        115                 120                 125

Ser Val Gln Arg Ser Ile Gly Gly Leu Arg Ile Ile Gly Leu Arg Leu
    130                 135                 140

Glu Gln Leu Ala Glu Asp Asn Gly Val Ser Phe Lys Phe Lys Ala Met
145                 150                 155                 160

Pro Ser Lys Thr Ser Ile Val Ser Pro Ser Thr Leu Gly Cys Lys Pro
                165                 170                 175

Gly Glu Thr Leu Ile Val Asn Phe Ala Phe Gln Leu His His Met Pro
            180                 185                 190

Asp Glu Ser Val Thr Thr Val Asn Gln Arg Asp Glu Leu Leu His Met
        195                 200                 205

Val Lys Ser Leu Asn Pro Lys Leu Val Thr Val Val Glu Gln Asp Val
    210                 215                 220

Asn Thr Asn Thr Ser Pro Phe Phe Pro Arg Phe Ile Glu Ala Tyr Glu
225                 230                 235                 240

Tyr Tyr Ser Ala Val Phe Glu Ser Leu Asp Met Thr Leu Pro Arg Glu
                245                 250                 255

Ser Gln Glu Arg Met Asn Val Glu Arg Gln Cys Leu Ala Arg Asp Ile
            260                 265                 270

Val Asn Ile Val Ala Cys Glu Gly Glu Glu Arg Ile Glu Arg Tyr Glu
        275                 280                 285

Ala Ala Gly Lys Trp Arg Ala Arg Met Met Met Ala Gly Phe Asn Pro
    290                 295                 300

Lys Pro Met Ser Ala Lys Val Thr Asn Asn Ile Gln Asn Leu Ile Lys
```

```
305                 310                 315                 320

Gln Gln Tyr Cys Asn Lys Tyr Lys Leu Lys Glu Glu Met Gly Glu Leu
                325                 330                 335

His Phe Cys Trp Glu Glu Lys Ser Leu Ile Val Ala Ser Ala Trp Arg
            340                 345                 350


<210> 107
<211> 325
<212> PRT
<213> Zea mays

<400> 107

Ala Met Glu Gly Glu Lys Met Val His Val Ile Asp Leu Asp Ala Ser
 1               5                  10                  15

Glu Pro Ala Gln Trp Leu Ala Leu Leu Gln Ala Phe Asn Ser Arg Pro
            20                  25                  30

Glu Gly Pro Pro His Leu Arg Ile Thr Gly Val His His Gln Lys Glu
        35                  40                  45

Val Leu Glu Gln Met Ala His Arg Leu Ile Glu Glu Ala Glu Lys Leu
    50                  55                  60

Asp Ile Pro Phe Gln Phe Asn Pro Val Val Ser Arg Leu Asp Cys Leu
65                  70                  75                  80

Asn Val Glu Gln Leu Arg Val Lys Thr Gly Glu Ala Leu Ala Val Ser
                85                  90                  95

Ser Val Leu Gln Leu His Thr Phe Leu Ala Ser Asp Asp Asp Leu Met
            100                 105                 110

Arg Lys Asn Cys Ala Leu Arg Phe His Asn Asn Pro Ser Gly Val Asp
        115                 120                 125

Leu Gln Arg Val Leu Met Met Ser His Gly Ser Ala Ala Glu Ala Arg
    130                 135                 140

Glu Asn Asp Met Ser Asn Asn Asn Gly Tyr Ser Pro Ser Gly Asp Ser
145                 150                 155                 160

Ala Ser Ser Leu Pro Leu Pro Ser Ser Gly Arg Thr Asp Ser Phe Leu
                165                 170                 175

Asn Ala Ile Trp Gly Leu Ser Pro Lys Val Met Val Val Thr Glu Gln
            180                 185                 190

Asp Ser Asp His Asn Gly Ser Thr Leu Met Glu Arg Leu Leu Glu Ser
        195                 200                 205

Leu Tyr Thr Tyr Ala Ala Leu Phe Asp Cys Leu Glu Thr Lys Val Pro
    210                 215                 220
```

Arg Thr Ser Gln Asp Arg Ile Lys Val Glu Lys Met Leu Phe Gly Glu
225 230 235 240

Glu Ile Lys Asn Ile Ile Ser Cys Glu Gly Phe Glu Arg Arg Glu Arg
245 250 255

His Glu Lys Leu Glu Lys Trp Ser Gln Arg Ile Asp Leu Ala Gly Phe
260 265 270

Gly Asn Val Pro Leu Ser Tyr Tyr Ala Met Leu Gln Ala Arg Arg Leu
275 280 285

Leu Gln Gly Cys Gly Phe Asp Gly Tyr Arg Ile Lys Glu Glu Ser Gly
290 295 300

Cys Ala Val Ile Cys Trp Gln Asp Arg Pro Leu Tyr Ser Val Ser Ala
305 310 315 320

Trp Arg Cys Arg Lys
325

<210> 108
<211> 306
<212> PRT
<213> Arabidopsis thaliana

<400> 108

Gly Thr Ser Pro Thr Gly Pro Glu Leu Leu Thr Tyr Met His Ile Leu
1 5 10 15

Tyr Glu Ala Cys Pro Tyr Phe Lys Phe Gly Tyr Glu Ser Ala Asn Gly
20 25 30

Ala Ile Ala Glu Ala Val Lys Asn Glu Ser Phe Val His Ile Ile Asp
35 40 45

Phe Gln Ile Ser Gln Gly Gly Gln Trp Val Ser Leu Ile Arg Ala Leu
50 55 60

Gly Ala Arg Pro Gly Gly Pro Pro Asn Val Arg Ile Thr Gly Ile Asp
65 70 75 80

Asp Pro Arg Ser Ser Phe Ala Arg Gln Gly Gly Leu Glu Leu Val Gly
85 90 95

Gln Arg Leu Gly Lys Leu Ala Glu Met Cys Gly Val Pro Phe Glu Phe
100 105 110

His Gly Ala Ala Leu Phe Cys Thr Glu Val Glu Ile Glu Lys Leu Gly
115 120 125

Val Arg Asn Gly Glu Ala Leu Ala Val Asn Phe Pro Leu Val Leu His
130 135 140

His Met Pro Asp Glu Ser Val Thr Val Glu Asn His Arg Asp Arg Leu
145 150 155 160

```
Leu Arg Leu Val Lys His Leu Ser Pro Asn Val Val Thr Leu Val Glu
                165                 170                 175

Gln Glu Ala Asn Thr Asn Thr Ala Pro Phe Leu Pro Arg Phe Val Glu
            180                 185                 190

Thr Met Asn His Tyr Leu Ala Val Phe Glu Ser Ile Asp Val Lys Leu
        195                 200                 205

Ala Arg Asp His Lys Glu Arg Ile Asn Val Glu Gln His Cys Leu Ala
    210                 215                 220

Arg Glu Val Glu Asn Leu Ile Ala Cys Glu Gly Val Glu Arg Glu Glu
225                 230                 235                 240

Arg His Glu Pro Leu Gly Lys Trp Arg Ser Arg Phe His Met Ala Gly
                245                 250                 255

Phe Lys Pro Tyr Pro Leu Ser Ser Tyr Val Asn Ala Thr Ile Lys Gly
            260                 265                 270

Leu Leu Glu Ser Tyr Ser Glu Lys Tyr Thr Leu Glu Glu Arg Asp Gly
        275                 280                 285

Ala Leu Tyr Leu Gly Trp Lys Asn Gln Pro Leu Ile Thr Ser Cys Ala
    290                 295                 300

Trp Arg
305
```

<210> 109
<211> 378
<212> PRT
<213> Arabidopsis thaliana

<400> 109

```
Ala Ala Ile Phe Tyr Gly His His His His Thr Pro Pro Pro Ala Lys
 1               5                  10                  15

Arg Leu Asn Pro Gly Pro Val Gly Ile Thr Glu Gln Leu Val Lys Ala
            20                  25                  30

Ala Glu Val Ile Glu Ser Asp Thr Cys Leu Ala Gln Gly Ile Leu Ala
        35                  40                  45

Arg Leu Asn Gln Gln Leu Ser Ser Pro Val Gly Lys Pro Leu Glu Arg
    50                  55                  60

Ala Ala Phe Tyr Phe Lys Glu Ala Leu Asn Asn Leu Leu His Asn Val
65                  70                  75                  80

Ser Gln Thr Leu Asn Pro Tyr Ser Leu Ile Phe Lys Ile Ala Ala Tyr
                85                  90                  95

Lys Ser Phe Ser Glu Ile Ser Pro Val Leu Gln Phe Ala Asn Phe Thr
            100                 105                 110
```

Ser Asn Gln Ala Leu Leu Glu Ser Phe His Gly Phe His Arg Leu His
115 120 125

Ile Ile Asp Phe Asp Ile Gly Tyr Gly Gly Gln Trp Ala Ser Leu Met
130 135 140

Gln Glu Leu Val Leu Arg Asp Asn Ala Ala Pro Leu Ser Leu Lys Ile
145 150 155 160

Thr Val Phe Ala Ser Pro Ala Asn His Asp Gln Leu Glu Leu Gly Phe
165 170 175

Thr Gln Asp Asn Leu Lys His Phe Ala Ser Glu Ile Asn Ile Ser Leu
180 185 190

Asp Ile Gln Val Leu Ser Leu Asp Leu Leu Gly Ser Ile Ser Trp Pro
195 200 205

Asn Ser Ser Glu Lys Glu Ala Val Ala Val Asn Ile Ser Ala Ala Ser
210 215 220

Phe Ser His Leu Pro Leu Val Leu Arg Phe Val Lys His Leu Ser Pro
225 230 235 240

Thr Ile Ile Val Cys Ser Asp Arg Gly Cys Glu Arg Thr Asp Leu Pro
245 250 255

Phe Ser Gln Gln Leu Ala His Ser Leu His Ser His Thr Ala Leu Phe
260 265 270

Glu Ser Leu Asp Ala Val Asn Ala Asn Leu Asp Ala Met Gln Lys Ile
275 280 285

Glu Arg Phe Leu Ile Gln Pro Glu Ile Glu Lys Leu Val Leu Asp Arg
290 295 300

Ser Arg Pro Ile Glu Arg Pro Met Met Thr Trp Gln Ala Met Phe Leu
305 310 315 320

Gln Met Gly Phe Ser Pro Val Thr His Ser Asn Phe Thr Glu Ser Gln
325 330 335

Ala Glu Cys Leu Val Gln Arg Thr Pro Val Arg Gly Phe His Val Glu
340 345 350

Lys Lys His Asn Ser Leu Leu Leu Cys Trp Gln Arg Thr Glu Leu Val
355 360 365

Gly Val Ser Ala Trp Arg Cys Arg Ser Ser
370 375

<210> 110
<211> 189
<212> PRT
<213> Arabidopsis thaliana

<400> 110

Lys Lys Trp Glu Thr Ile Thr Leu Asp Glu Leu Met Ile Asn Pro Gly
1 5 10 15

Glu Thr Thr Val Val Asn Cys Ile His Arg Leu Gln Tyr Thr Pro Asp
20 25 30

Glu Thr Val Ser Leu Asp Ser Pro Arg Asp Thr Val Leu Lys Leu Phe
35 40 45

Arg Asp Ile Asn Pro Asp Leu Phe Val Phe Ala Glu Ile Asn Gly Met
50 55 60

Tyr Asn Ser Pro Phe Phe Met Thr Arg Phe Arg Glu Ala Leu Phe His
65 70 75 80

Tyr Ser Ser Leu Phe Asp Met Phe Asp Thr Thr Ile His Cys Glu Arg
85 90 95

Arg Asp Glu Val Ile Ser Cys Glu Gly Ala Glu Arg Phe Ala Arg Pro
100 105 110

Glu Thr Tyr Lys Gln Trp Arg Val Arg Ile Leu Arg Ala Gly Phe Lys
115 120 125

Pro Ala Thr Ile Ser Lys Gln Ile Met Lys Glu Ala Lys Glu Ile Val
130 135 140

Arg Lys Arg Tyr His Arg Asp Phe Val Ile Asp Ser Asp Asn Asn Trp
145 150 155 160

Met Leu Gln Gly Trp Lys Gly Arg Val Ile Tyr Ala Phe Ser Cys Trp
165 170 175

Lys Pro Ala Glu Lys Phe Thr Asn Asn Asn Leu Asn Ile
180 185

<210> 111
<211> 284
<212> PRT
<213> Arabidopsis thaliana

<400> 111

Ala Asn Val Glu Ile Leu Glu Ala Ile Ala Gly Glu Thr Arg Val His
1 5 10 15

Ile Ile Asp Phe Gln Ile Ala Gln Gly Ser Gln Tyr Met Phe Leu Ile
20 25 30

Gln Glu Leu Ala Lys Arg Pro Gly Gly Pro Pro Leu Leu Arg Val Thr
35 40 45

Gly Val Asp Asp Ser Gln Ser Thr Tyr Ala Arg Gly Gly Gly Leu Ser
50 55 60

Leu Val Gly Glu Arg Leu Ala Thr Leu Ala Gln Ser Cys Gly Val Pro
65 70 75 80

Phe Glu Phe His Asp Ala Ile Met Ser Gly Cys Lys Val Gln Arg Glu
85 90 95

His Leu Gly Leu Glu Pro Gly Phe Ala Val Val Val Asn Phe Pro Tyr
100 105 110

Val Leu His His Met Pro Asp Glu Ser Val Ser Val Glu Lys Tyr Arg
115 120 125

Asp Arg Leu Leu His Leu Ile Lys Ser Leu Ser Pro Lys Leu Val Thr
130 135 140

Leu Val Glu Gln Glu Ser Asn Thr Asn Thr Ser Pro Leu Val Ser Arg
145 150 155 160

Phe Val Glu Thr Leu Asp Tyr Tyr Thr Ala Met Phe Glu Ser Ile Asp
165 170 175

Ala Ala Arg Pro Arg Asp Asp Lys Gln Arg Ile Ser Ala Glu Gln His
180 185 190

Cys Val Ala Arg Asp Ile Val Asn Met Ile Ala Cys Glu Glu Ser Glu
195 200 205

Arg Val Glu Arg His Glu Val Leu Gly Lys Trp Arg Val Arg Met Met
210 215 220

Met Ala Gly Phe Thr Gly Trp Pro Val Ser Thr Ser Ala Ala Phe Ala
225 230 235 240

Ala Ser Glu Met Leu Lys Ala Tyr Asp Lys Asn Tyr Lys Leu Gly Gly
245 250 255

His Glu Gly Ala Leu Tyr Leu Phe Trp Lys Arg Arg Pro Met Ala Thr
260 265 270

Cys Ser Val Trp Lys Pro Asn Pro Asn Tyr Ile Gly
275 280

<210> 112
<211> 808
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> SITE
<222> 1...808
<223> Xaa=unknown amino acid

<400> 112

Leu Leu Lys Val Leu Leu Cys His Leu Val Ala Glu Ser Thr Lys Arg
1 5 10 15

Arg Ile Lys Ile Arg Pro Leu Leu Asp Ile Asn Asp Ser Gly Phe Leu
20 25 30

```
Gly Phe Trp Ser Trp Ile His Met Gly Ser Tyr Pro Asp Gly Phe Pro
        35                  40                  45

Gly Ser Met Asp Glu Leu Asp Phe Asn Lys Asp Phe Asp Leu Pro Pro
    50                  55                  60

Ser Ser Asn Gln Thr Leu Gly Leu Ala Asn Gly Phe Tyr Leu Asp Asp
65                  70                  75                  80

Leu Asp Phe Ser Ser Leu Asp Pro Pro Glu Ala Tyr Pro Ser Gln Asn
                85                  90                  95

Asn Asn Asn Asn Asn Ile Asn Asn Lys Ala Val Ala Gly Asp Leu Leu
            100                 105                 110

Ser Ser Ser Ser Asp Asp Ala Asp Phe Ser Asp Ser Val Leu Lys Tyr
        115                 120                 125

Ile Ser Gln Val Leu Met Glu Glu Asp Met Glu Glu Lys Pro Cys Met
    130                 135                 140

Phe His Asp Ala Leu Ala Leu Gln Ala Ala Glu Lys Ser Leu Tyr Glu
145                 150                 155                 160

Ala Leu Gly Glu Lys Asp Pro Ser Ser Ser Ser Ala Ser Ser Val Asp
                165                 170                 175

His Pro Glu Arg Leu Ala Ser His Ser Pro Asp Gly Ser Cys Ser Gly
            180                 185                 190

Gly Ala Phe Ser Asp Tyr Ala Ser Thr Thr Thr Thr Thr Ser Ser Asp
        195                 200                 205

Ser His Trp Ser Val Asp Gly Leu Glu Asn Arg Pro Ser Trp Leu His
    210                 215                 220

Thr Pro Met Pro Ser Asn Phe Val Phe Gln Ser Thr Ser Arg Ser Asn
225                 230                 235                 240

Ser Val Thr Gly Gly Gly Gly Gly Gly Asn Ser Ala Val Tyr Gly Ser
                245                 250                 255

Gly Phe Gly Asp Asp Leu Val Ser Asn Met Phe Lys Asp Asp Glu Leu
            260                 265                 270

Ala Met Gln Phe Lys Lys Gly Val Glu Glu Ala Ser Lys Phe Leu Pro
        275                 280                 285

Lys Ser Ser Gln Leu Phe Ile Asp Val Asp Ser Tyr Ile Pro Met Asn
    290                 295                 300

Ser Gly Ser Lys Glu Asn Gly Ser Glu Val Phe Val Lys Thr Glu Lys
305                 310                 315                 320

Lys Asp Glu Thr Glu His His His His His Ser Tyr Ala Pro Pro Pro
                325                 330                 335

Asn Arg Leu Thr Gly Lys Lys Ser His Trp Arg Asp Glu Asp Glu Asp
```

```
            340                 345                 350

Phe Val Glu Glu Arg Ser Asn Lys Gln Ser Ala Val Tyr Val Glu Glu
        355                 360                 365

Ser Glu Leu Ser Glu Met Phe Asp Asn Met Phe Leu Cys Gly Pro Gly
    370                 375                 380

Lys Pro Val Cys Ile Leu Asn Gln Asn Phe Pro Thr Glu Ser Ala Lys
385                 390                 395                 400

Val Val Thr Ala Gln Ser Asn Gly Ala Lys Ile Arg Gly Lys Lys Ser
                405                 410                 415

Thr Ser Thr Ser His Ser Asn Asp Ser Lys Lys Glu Thr Ala Asp Leu
            420                 425                 430

Arg Thr Leu Leu Val Leu Cys Ala Gln Ala Val Ser Val Asp Asp Arg
        435                 440                 445

Arg Thr Ala Asn Val Xaa Leu Arg Gln Ile Arg Glu His Ser Ser Pro
    450                 455                 460

Leu Gly Asn Gly Ser Glu Arg Leu Ala His Tyr Phe Ala Asn Ser Leu
465                 470                 475                 480

Glu Ala Arg Leu Ala Gly Thr Gly Thr Gln Ile Tyr Thr Ala Leu Ser
                485                 490                 495

Ser Lys Lys Thr Ser Ala Ala Asp Met Leu Lys Ala Tyr Gln Thr Tyr
            500                 505                 510

Met Ser Val Cys Pro Phe Lys Lys Ala Ala Ile Ile Phe Ala Asn His
        515                 520                 525

Ser Met Met Arg Phe Thr Ala Asn Ala Asn Thr Ile His Ile Ile Asp
    530                 535                 540

Phe Gly Ile Ser Tyr Gly Phe Gln Trp Pro Ala Leu Ile His Arg Leu
545                 550                 555                 560

Ser Leu Ser Arg Pro Gly Gly Ser Pro Lys Leu Arg Ile Thr Gly Ile
                565                 570                 575

Glu Leu Pro Gln Arg Gly Phe Arg Pro Ala Glu Glu Phe Arg Arg Gln
            580                 585                 590

Val Ile Ala Trp Leu Asp Thr Val Ser Asp Thr Met Phe Arg Leu Ser
        595                 600                 605

Thr Thr Gln Leu Leu Arg Asn Gly Glu Thr Ile Gln Val Glu Asp Leu
    610                 615                 620

Lys Leu Arg Gln Gly Glu Tyr Val Val Val Asn Ser Leu Phe Arg Phe
625                 630                 635                 640

Arg Asn Leu Leu Asp Glu Thr Val Leu Val Asn Ser Pro Arg Asp Ala
                645                 650                 655
```

Val Leu Lys Leu Ile Arg Lys Ile Asn Pro Asn Val Phe Ile Pro Ala
660 665 670

Ile Leu Ser Gly Asn Tyr Asn Ala Pro Phe Phe Val Thr Arg Phe Arg
675 680 685

Glu Ala Leu Phe His Tyr Ser Ala Val Phe Asp Met Cys Asp Ser Lys
690 695 700

Leu Ala Arg Glu Asp Glu Met Arg Leu Met Tyr Val Phe Glu Phe Tyr
705 710 715 720

Gly Arg Glu Ile Val Asn Val Val Ala Ser Glu Gly Thr Glu Arg Val
725 730 735

Glu Ser Arg Glu Thr Tyr Lys Gln Trp Gln Ala Arg Leu Ile Arg Ala
740 745 750

Gly Phe Arg Gln Leu Pro Leu Glu Lys Glu Leu Met Gln Asn Leu Lys
755 760 765

Leu Lys Ile Glu Asn Gly Tyr Asp Lys Asn Phe Asp Val Asp Gln Asn
770 775 780

Gly Asn Trp Leu Leu Gln Gly Trp Lys Gly Arg Ile Val Tyr Ala Ser
785 790 795 800

Ser Leu Trp Val Pro Ser Ser Ser
805

<210> 113
<211> 377
<212> PRT
<213> Arabidopsis thaliana

<400> 113

Glu Val Val Asp Leu Arg Ser Leu Leu Ile His Cys Ala Gln Ala Val
1 5 10 15
Ala Ala Asp Asp Arg Arg Cys Ala Gly Gln Leu Leu Lys Gln Ile Arg
20 25 30

Leu His Ser Thr Pro Phe Gly Asp Gly Asn Gln Arg Leu Ala His Cys
35 40 45

Phe Ala Asn Gly Leu Glu Ala Arg Leu Ala Gly Thr Gly Ser Gln Ile
50 55 60

Tyr Lys Gly Ile Val Ser Lys Pro Arg Ser Ala Ala Ala Val Leu Lys
65 70 75 80

Ala His Gln Leu Phe Leu Ala Cys Cys Pro Phe Arg Lys Leu Ser Tyr
85 90 95

Phe Ile Thr Asn Lys Thr Ile Arg Asp Leu Val Gly Asn Ser Gln Arg
100 105 110

```
Val His Val Ile Asp Phe Gly Ile Leu Tyr Gly Phe Gln Trp Pro Thr
        115                 120                 125

Leu Ile His Arg Phe Ser Met Tyr Gly Ser Pro Lys Val Arg Ile Thr
    130                 135                 140

Gly Ile Glu Phe Pro Gln Pro Gly Phe Arg Pro Ala Gln Arg Val Glu
145                 150                 155                 160

Glu Thr Gly Gln Arg Leu Ala Ala Tyr Ala Lys Leu Phe Gly Val Pro
                165                 170                 175

Phe Glu Tyr Lys Ala Ile Ala Lys Lys Trp Asp Ala Ile Gln Leu Glu
            180                 185                 190

Asp Leu Asp Ile Asp Arg Asp Glu Ile Thr Val Val Asn Cys Leu Tyr
        195                 200                 205

Arg Ala Glu Asn Leu His Asp Glu Ser Val Lys Val Glu Ser Cys Arg
    210                 215                 220

Asp Thr Val Leu Asn Leu Ile Gly Lys Ile Asn Pro Asp Leu Phe Val
225                 230                 235                 240

Phe Gly Ile Val Asn Gly Ala Tyr Asn Ala Pro Phe Phe Val Thr Arg
                245                 250                 255

Phe Arg Glu Ala Leu Phe His Phe Ser Ser Ile Phe Asp Met Leu Glu
            260                 265                 270

Thr Ile Val Pro Arg Glu Asp Glu Glu Arg Met Phe Leu Glu Met Glu
        275                 280                 285

Val Phe Gly Arg Glu Ala Leu Asn Val Ile Ala Cys Glu Gly Trp Glu
    290                 295                 300

Arg Val Glu Arg Pro Glu Thr Tyr Lys Gln Trp His Val Arg Ala Met
305                 310                 315                 320

Arg Ser Gly Leu Val Gln Val Pro Phe Asp Pro Ser Ile Met Lys Thr
                325                 330                 335

Ser Leu His Lys Val His Thr Phe Tyr His Lys Asp Phe Val Ile Asp
            340                 345                 350

Gln Asp Asn Arg Trp Leu Leu Gln Gly Trp Lys Gly Arg Thr Val Met
        355                 360                 365

Ala Leu Ser Val Trp Lys Pro Glu Ser
    370                 375
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<210> 114
<211> 381
<212> PRT
<213> Arabidopsis thaliana

<400> 114

Glu Thr Ala Asp Leu Arg Thr Leu Leu Val Leu Cys Ala Gln Ala Val
1 5 10 15

Ser Val Asp Asp Arg Arg Thr Ala Asn Glu Met Leu Arg Gln Ile Arg
20 25 30

Glu His Ser Ser Pro Leu Gly Asn Gly Ser Glu Arg Leu Ala His Tyr
35 40 45

Phe Ala Asn Ser Leu Glu Ala Arg Leu Ala Gly Thr Gly Thr Gln Ile
50 55 60

Tyr Thr Ala Leu Ser Ser Lys Lys Thr Ser Ala Ala Asp Met Leu Lys
65 70 75 80

Ala Tyr Gln Thr Tyr Met Ser Val Cys Pro Phe Lys Lys Ala Ala Ile
85 90 95

Ile Phe Ala Asn His Ser Met Met Arg Phe Thr Ala Asn Ala Asn Thr
100 105 110

Ile His Ile Ile Asp Phe Gly Ile Ser Tyr Gly Phe Gln Trp Pro Ala
115 120 125

Leu Ile His Arg Leu Ser Leu Ser Arg Pro Gly Gly Ser Pro Lys Leu
130 135 140

Arg Ile Thr Gly Ile Glu Leu Pro Gln Arg Gly Phe Arg Pro Ala Glu
145 150 155 160

Glu Phe Arg Arg Gln Val Ile Ala Trp Leu Asp Thr Val Ser Asp Thr
165 170 175

Met Phe Arg Leu Ser Thr Thr Gln Leu Leu Arg Asn Gly Glu Thr Ile
180 185 190

Gln Val Glu Asp Leu Lys Leu Arg Gln Gly Glu Tyr Val Val Val Asn
195 200 205

Ser Leu Phe Arg Phe Arg Asn Leu Leu Asp Glu Thr Val Leu Val Asn
210 215 220

Ser Pro Arg Asp Ala Val Leu Lys Leu Ile Arg Lys Ile Asn Pro Asn
225 230 235 240

Val Phe Ile Pro Ala Ile Leu Ser Gly Asn Tyr Asn Ala Pro Phe Phe
245 250 255

Val Thr Arg Phe Arg Glu Ala Leu Phe His Tyr Ser Ala Val Phe Asp
260 265 270

Met Cys Asp Ser Lys Leu Ala Arg Glu Asp Glu Met Arg Leu Met Tyr
275 280 285

Val Phe Glu Phe Tyr Gly Arg Glu Ile Val Asn Val Val Ala Ser Glu
290 295 300

Gly Thr Glu Arg Val Glu Ser Arg Glu Thr Tyr Lys Gln Trp Gln Ala
305 310 315 320

Arg Leu Ile Arg Ala Gly Phe Arg Gln Leu Pro Leu Glu Lys Glu Leu
325 330 335

Met Gln Asn Leu Lys Leu Lys Ile Glu Asn Gly Tyr Asp Lys Asn Phe
340 345 350

Asp Val Asp Gln Asn Gly Asn Trp Leu Leu Gln Gly Trp Lys Gly Arg
355 360 365

Ile Val Tyr Ala Ser Ser Leu Trp Val Pro Ser Ser Ser
370 375 380

<210> 115
<211> 352
<212> PRT
<213> Arabidopsis thaliana

<400> 115

Leu Ser Met Val Asn Glu Leu Arg Gln Ile Val Ser Ile Gln Gly Asp
1 5 10 15

Pro Ser Gln Arg Ile Ala Ala Tyr Met Val Glu Gly Leu Ala Ala Arg
20 25 30

Met Ala Ala Ser Gly Lys Phe Ile Tyr Arg Ala Leu Lys Cys Lys Glu
35 40 45

Pro Pro Ser Asp Glu Arg Leu Ala Ala Met Gln Val Leu Phe Glu Val
50 55 60

Cys Pro Cys Phe Lys Phe Gly Phe Leu Ala Ala Asn Gly Ala Ile Leu
65 70 75 80

Glu Ala Ile Lys Gly Glu Glu Glu Val His Ile Ile Asp Phe Asp Ile
85 90 95

Asn Gln Gly Asn Gln Tyr Met Thr Leu Ile Arg Ser Ile Ala Glu Leu
100 105 110

Pro Gly Lys Arg Pro Arg Leu Arg Leu Thr Gly Ile Asp Asp Pro Glu
115 120 125

Ser Val Gln Arg Ser Ile Gly Gly Leu Arg Ile Ile Gly Leu Arg Leu
130 135 140

Glu Gln Leu Ala Glu Asp Asn Gly Val Ser Phe Lys Phe Lys Ala Met
145 150 155 160

Pro Ser Lys Thr Ser Ile Val Ser Pro Ser Thr Leu Gly Cys Lys Pro
165 170 175

Gly Glu Thr Leu Ile Val Asn Phe Ala Phe Gln Leu His His Met Pro
180 185 190

Asp Glu Ser Val Thr Thr Val Asn Gln Arg Asp Glu Leu Leu His Met
195 200 205

Val Lys Ser Leu Asn Pro Lys Leu Val Thr Val Val Glu Gln Asp Val
210 215 220

Asn Thr Asn Thr Ser Pro Phe Phe Pro Arg Phe Ile Glu Ala Tyr Glu
225 230 235 240

Tyr Tyr Ser Ala Val Phe Glu Ser Leu Asp Met Thr Leu Pro Arg Glu
245 250 255

Ser Gln Glu Arg Met Asn Val Glu Arg Gln Cys Leu Ala Arg Asp Ile
260 265 270

Val Asn Ile Val Ala Cys Glu Gly Glu Glu Arg Ile Glu Arg Tyr Glu
275 280 285

Ala Ala Gly Lys Trp Arg Ala Arg Met Met Met Ala Gly Phe Asn Pro
290 295 300

Lys Pro Met Ser Ala Lys Val Thr Asn Asn Ile Gln Asn Leu Ile Lys
305 310 315 320

Gln Gln Tyr Cys Asn Lys Tyr Lys Leu Lys Glu Glu Met Gly Glu Leu
325 330 335

His Phe Cys Trp Glu Glu Lys Ser Leu Ile Val Ala Ser Ala Trp Arg
340 345 350

<210> 116
<211> 380
<212> PRT
<213> Arabidopsis thaliana

<400> 116

Thr Ser Val Cys Ser Arg Gln Thr Val Met Glu Ile Ala Thr Ala Ile
1 5 10 15

Ala Glu Gly Lys Thr Glu Ile Ala Thr Glu Ile Leu Ala Arg Val Ser
20 25 30

Gln Thr Pro Asn Leu Glu Arg Asn Ser Glu Glu Lys Leu Val Asp Phe
35 40 45

Met Val Ala Ala Leu Arg Ser Arg Ile Ala Ser Pro Val Thr Glu Leu
50 55 60

Tyr Gly Lys Glu His Leu Ile Ser Thr Gln Leu Leu Tyr Glu Leu Ser
65 70 75 80

Pro Cys Phe Lys Leu Gly Phe Glu Ala Ala Asn Leu Ala Ile Leu Asp
85 90 95

Ala Ala Asp Asn Asn Asp Gly Gly Met Met Ile Pro His Val Ile Asp

```
                100                 105                 110

Phe Asp Ile Gly Glu Gly Gly Gln Tyr Val Asn Leu Leu Arg Thr Leu
        115                 120                 125

Ser Thr Arg Arg Asn Gly Lys Ser Gln Ser Gln Asn Ser Pro Val Val
    130                 135                 140

Lys Ile Thr Ala Val Ala Asn Asn Val Tyr Gly Cys Leu Val Asp Asp
145                 150                 155                 160

Gly Gly Glu Glu Arg Leu Lys Ala Val Gly Asp Leu Leu Ser Gln Leu
                165                 170                 175

Gly Asp Arg Leu Gly Ile Ser Val Ser Phe Asn Val Val Thr Ser Leu
            180                 185                 190

Arg Leu Gly Asp Leu Asn Arg Glu Ser Leu Gly Cys Asp Pro Asp Glu
        195                 200                 205

Thr Leu Ala Val Asn Leu Ala Phe Lys Leu Tyr Arg Val Pro Asp Glu
    210                 215                 220

Ser Val Cys Thr Glu Asn Pro Arg Asp Glu Leu Leu Arg Arg Val Lys
225                 230                 235                 240

Gly Leu Lys Pro Arg Val Val Thr Leu Val Glu Gln Glu Met Asn Ser
                245                 250                 255

Asn Thr Ala Pro Phe Leu Gly Arg Val Ser Glu Ser Cys Ala Cys Tyr
            260                 265                 270

Gly Ala Leu Leu Glu Ser Val Glu Ser Thr Val Pro Ser Thr Asn Ser
        275                 280                 285

Asp Arg Ala Lys Val Glu Glu Gly Ile Gly Arg Lys Leu Val Asn Ala
    290                 295                 300

Val Ala Cys Glu Gly Ile Asp Arg Ile Glu Arg Cys Glu Val Phe Gly
305                 310                 315                 320

Lys Trp Arg Met Arg Met Ser Met Ala Gly Phe Glu Leu Met Pro Leu
                325                 330                 335

Ser Glu Lys Ile Ala Glu Ser Met Lys Ser Arg Gly Asn Arg Val His
            340                 345                 350

Pro Gly Phe Thr Val Lys Glu Asp Asn Gly Gly Val Cys Phe Gly Trp
        355                 360                 365

Met Gly Arg Ala Leu Thr Val Ala Ser Ala Trp Arg
    370                 375                 380
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<210> 117
<211> 374
<212> PRT

<213> Arabidopsis thaliana

<400> 117

```
Phe Asp Leu Glu Pro Pro Leu Leu Lys Ala Ile Tyr Asp Cys Ala Arg
 1               5                  10                  15

Ile Ser Asp Ser Asp Pro Asn Glu Ala Ser Lys Thr Leu Leu Gln Ile
            20                  25                  30

Arg Glu Ser Val Ser Glu Leu Gly Asp Pro Thr Glu Arg Val Ala Phe
        35                  40                  45

Tyr Phe Thr Glu Ala Leu Ser Asn Arg Leu Ser Pro Asn Ser Pro Ala
    50                  55                  60

Thr Ser Ser Ser Ser Ser Ser Thr Glu Asp Leu Ile Leu Ser Tyr Lys
65                  70                  75                  80

Thr Leu Asn Asp Ala Cys Pro Tyr Ser Lys Phe Ala His Leu Thr Ala
                85                  90                  95

Asn Gln Ala Ile Leu Glu Ala Thr Glu Lys Ser Asn Lys Ile His Ile
            100                 105                 110

Val Asp Phe Gly Ile Val Gln Gly Ile Gln Trp Pro Ala Leu Leu Gln
        115                 120                 125

Ala Leu Ala Thr Arg Thr Ser Gly Lys Pro Thr Gln Ile Arg Val Ser
    130                 135                 140

Gly Ile Pro Ala Pro Ser Leu Gly Glu Ser Pro Glu Pro Ser Leu Ile
145                 150                 155                 160

Ala Thr Gly Asn Arg Leu Arg Asp Phe Ala Lys Val Leu Asp Leu Asn
                165                 170                 175

Phe Asp Phe Ile Pro Ile Leu Thr Pro Ile His Leu Leu Asn Gly Ser
            180                 185                 190

Ser Phe Arg Val Asp Pro Asp Glu Val Leu Ala Val Asn Phe Met Leu
        195                 200                 205

Gln Leu Tyr Lys Leu Leu Asp Glu Thr Pro Thr Ile Val Asp Thr Ala
    210                 215                 220

Leu Arg Leu Ala Lys Ser Leu Asn Pro Arg Val Val Thr Leu Gly Glu
225                 230                 235                 240

Tyr Glu Val Ser Leu Asn Arg Val Gly Phe Ala Asn Arg Val Lys Asn
                245                 250                 255

Ala Leu Gln Phe Tyr Ser Ala Val Phe Glu Ser Leu Glu Pro Asn Leu
            260                 265                 270

Gly Arg Asp Ser Glu Glu Arg Val Arg Val Glu Arg Glu Leu Phe Gly
        275                 280                 285
```

Arg Arg Ile Ser Gly Leu Ile Gly Pro Glu Lys Thr Gly Ile His Arg
290 295 300

Glu Arg Met Glu Glu Lys Glu Gln Trp Arg Val Leu Met Glu Asn Ala
305 310 315 320

Gly Phe Glu Ser Val Lys Leu Ser Asn Tyr Ala Val Ser Gln Ala Lys
325 330 335

Ile Leu Leu Trp Asn Tyr Asn Tyr Ser Asn Leu Tyr Ser Ile Val Glu
340 345 350

Ser Lys Pro Gly Phe Ile Ser Leu Ala Trp Asn Asp Leu Pro Leu Leu
355 360 365

Thr Leu Ser Ser Trp Arg
370

<210> 118
<211> 358
<212> PRT
<213> Arabidopsis thaliana

<400> 118

Gly Pro Val Gly Ile Thr Glu Gln Leu Val Lys Ala Ala Glu Val Ile
1 5 10 15

Glu Ser Asp Thr Cys Leu Ala Gln Gly Ile Leu Ala Arg Leu Asn Gln
20 25 30

Gln Leu Ser Ser Pro Val Gly Lys Pro Leu Glu Arg Ala Ala Phe Tyr
35 40 45

Phe Lys Glu Ala Leu Asn Asn Leu Leu His Asn Val Ser Gln Thr Leu
50 55 60

Asn Pro Tyr Ser Leu Ile Phe Lys Ile Ala Ala Tyr Lys Ser Phe Ser
65 70 75 80

Glu Ile Ser Pro Val Leu Gln Phe Ala Asn Phe Thr Ser Asn Gln Ala
85 90 95

Leu Leu Glu Ser Phe His Gly Phe His Arg Leu His Ile Ile Asp Phe
100 105 110

Asp Ile Gly Tyr Gly Gly Gln Trp Ala Ser Leu Met Gln Glu Leu Val
115 120 125

Leu Arg Asp Asn Ala Ala Pro Leu Ser Leu Lys Ile Thr Val Phe Ala
130 135 140

Ser Pro Ala Asn His Asp Gln Leu Glu Leu Gly Phe Thr Gln Asp Asn
145 150 155 160

Leu Lys His Phe Ala Ser Glu Ile Asn Ile Ser Leu Asp Ile Gln Val
165 170 175

```
Leu Ser Leu Asp Leu Leu Gly Ser Ile Ser Trp Pro Asn Ser Ser Glu
            180                 185                 190

Lys Glu Ala Val Ala Val Asn Ile Ser Ala Ala Ser Phe Ser His Leu
        195                 200                 205

Pro Leu Val Leu Arg Phe Val Lys His Leu Ser Pro Thr Ile Ile Val
    210                 215                 220

Cys Ser Asp Arg Gly Cys Glu Arg Thr Asp Leu Pro Phe Ser Gln Gln
225                 230                 235                 240

Leu Ala His Ser Leu His Ser His Thr Ala Leu Phe Glu Ser Leu Asp
                245                 250                 255

Ala Val Asn Ala Asn Leu Asp Ala Met Gln Lys Ile Glu Arg Phe Leu
            260                 265                 270

Ile Gln Pro Glu Ile Glu Lys Leu Val Leu Asp Arg Ser Arg Pro Ile
        275                 280                 285

Glu Arg Pro Met Met Thr Trp Gln Ala Met Phe Leu Gln Met Gly Phe
    290                 295                 300

Ser Pro Val Thr His Ser Asn Phe Thr Glu Ser Gln Ala Glu Cys Leu
305                 310                 315                 320

Val Gln Arg Thr Pro Val Arg Gly Phe His Val Glu Lys Lys His Asn
                325                 330                 335

Ser Leu Leu Leu Cys Trp Gln Arg Thr Glu Leu Val Gly Val Ser Ala
            340                 345                 350

Trp Arg Cys Arg Ser Ser
        355


<210> 119
<211> 369
<212> PRT
<213> Arabidopsis thaliana

<400> 119

Gly Gly Phe Gly Phe Ile Glu Asp Leu Ile Arg Val Val Asp Cys Val
 1               5                  10                  15

Glu Ser Asp Glu Leu Gln Leu Ala Gln Val Val Leu Ser Arg Leu Asn
            20                  25                  30

Gln Arg Leu Arg Ser Pro Ala Gly Arg Pro Leu Gln Arg Ala Ala Phe
        35                  40                  45

Tyr Phe Lys Glu Ala Leu Gly Ser Phe Leu Thr Gly Ser Asn Arg Asn
    50                  55                  60

Pro Ile Arg Leu Ser Ser Trp Ser Glu Ile Val Gln Arg Ile Arg Ala
65                  70                  75                  80
```

Ile Lys Glu Tyr Ser Gly Ile Ser Pro Ile Pro Leu Phe Ser His Phe
85 90 95

Thr Ala Asn Gln Ala Ile Leu Asp Ser Leu Ser Ser Gln Ser Ser Ser
100 105 110

Pro Phe Val His Val Val Asp Phe Glu Ile Gly Phe Gly Gly Gln Tyr
115 120 125

Ala Ser Leu Met Arg Glu Ile Thr Glu Lys Ser Val Ser Gly Gly Phe
130 135 140

Leu Arg Val Thr Ala Val Val Ala Glu Glu Cys Ala Val Glu Thr Arg
145 150 155 160

Leu Val Lys Glu Asn Leu Thr Gln Phe Ala Ala Glu Met Lys Ile Arg
165 170 175

Phe Gln Ile Glu Phe Val Leu Met Lys Thr Phe Glu Met Leu Ser Phe
180 185 190

Lys Ala Ile Arg Phe Val Glu Gly Glu Arg Thr Val Val Leu Ile Ser
195 200 205

Pro Ala Ile Phe Arg Arg Leu Ser Gly Ile Thr Asp Phe Val Asn Asn
210 215 220

Leu Arg Arg Val Ser Pro Lys Val Val Val Phe Val Asp Ser Glu Gly
225 230 235 240

Trp Thr Glu Ile Ala Gly Ser Gly Ser Phe Arg Arg Glu Phe Val Ser
245 250 255

Ala Leu Glu Phe Tyr Thr Met Val Leu Glu Ser Leu Asp Ala Ala Ala
260 265 270

Pro Pro Gly Asp Leu Val Lys Lys Ile Val Glu Ala Phe Val Leu Arg
275 280 285

Pro Lys Ile Ser Ala Ala Val Glu Thr Ala Ala Asp Arg Arg His Thr
290 295 300

Gly Glu Met Thr Trp Arg Glu Ala Phe Cys Ala Ala Gly Met Arg Pro
305 310 315 320

Ile Gln Gln Ser Gln Phe Ala Asp Phe Gln Ala Glu Cys Leu Leu Glu
325 330 335

Lys Ala Gln Val Arg Gly Phe His Val Ala Lys Arg Gln Gly Glu Leu
340 345 350

Val Leu Cys Trp His Gly Arg Ala Leu Val Ala Thr Ser Ala Trp Arg
355 360 365

Phe

<210> 120
<211> 385
<212> PRT
<213> Arabidopsis thaliana

<400> 120

Ala Gln Asn Leu Leu Ser Ile Leu Ser Leu Asn Ser Ser Pro His Gly
1 5 10 15

Asp Ser Thr Glu Arg Leu Val His Leu Phe Thr Lys Ala Leu Ser Val
20 25 30

Arg Ile Asn Arg Gln Gln Gln Asp Gln Thr Ala Glu Thr Val Ala Thr
35 40 45

Trp Thr Thr Asn Glu Met Thr Met Ser Asn Ser Thr Val Phe Thr Ser
50 55 60

Ser Val Cys Lys Glu Gln Phe Leu Phe Arg Thr Lys Asn Asn Asn Ser
65 70 75 80

Asp Phe Glu Ser Cys Tyr Tyr Leu Trp Leu Asn Gln Leu Thr Pro Phe
85 90 95

Ile Arg Phe Gly His Leu Thr Ala Asn Gln Ala Ile Leu Asp Ala Thr
100 105 110

Glu Thr Asn Asp Asn Gly Ala Leu His Ile Leu Asp Leu Asp Ile Ser
115 120 125

Gln Gly Leu Gln Trp Pro Pro Leu Met Gln Ala Leu Ala Glu Arg Ser
130 135 140

Ser Asn Pro Ser Ser Pro Pro Pro Ser Leu Arg Ile Thr Gly Cys Gly
145 150 155 160

Arg Asp Val Thr Gly Leu Asn Arg Thr Gly Asp Arg Leu Thr Arg Phe
165 170 175

Ala Asp Ser Leu Gly Leu Gln Phe Gln Phe His Thr Leu Val Ile Val
180 185 190

Glu Glu Asp Leu Ala Gly Leu Leu Leu Gln Ile Arg Leu Leu Ala Leu
195 200 205

Ser Ala Val Gln Gly Glu Thr Ile Ala Val Asn Cys Val His Phe Leu
210 215 220

His Lys Ile Phe Asn Asp Asp Gly Asp Met Ile Gly His Phe Leu Ser
225 230 235 240

Ala Ile Lys Ser Leu Asn Ser Arg Ile Val Thr Met Ala Glu Arg Glu
245 250 255

Ala Asn His Gly Asp His Ser Phe Leu Asn Arg Phe Ser Glu Ala Val
260 265 270

Asp His Tyr Met Ala Ile Phe Asp Ser Leu Glu Ala Thr Leu Pro Pro
275 280 285

Asn Ser Arg Glu Arg Leu Thr Leu Glu Gln Arg Trp Phe Gly Lys Glu
290 295 300

Ile Leu Asp Val Val Ala Ala Glu Glu Thr Glu Arg Lys Gln Arg His
305 310 315 320

Arg Arg Phe Glu Ile Trp Glu Glu Met Met Lys Arg Phe Gly Phe Val
325 330 335

Asn Val Pro Ile Gly Ser Phe Ala Leu Ser Gln Ala Lys Leu Leu Leu
340 345 350

Arg Leu His Tyr Pro Ser Glu Gly Tyr Asn Leu Gln Phe Leu Asn Asn
355 360 365

Ser Leu Phe Leu Gly Trp Gln Asn Arg Pro Leu Phe Ser Val Ser Ser
370 375 380

Trp
385

<210> 121
<211> 369
<212> PRT
<213> Arabidopsis thaliana

<400> 121

Asn Gly Val Arg Leu Val His Ala Leu Leu Ala Cys Ala Glu Ala Val
1 5 10 15

Gln Lys Glu Asn Leu Thr Val Ala Glu Ala Leu Val Lys Gln Ile Gly
20 25 30

Phe Leu Ala Val Ser Gln Ile Gly Ala Met Arg Lys Val Ala Thr Tyr
35 40 45

Phe Ala Glu Ala Leu Ala Arg Arg Ile Tyr Arg Leu Ser Pro Ser Gln
50 55 60

Ser Pro Ile Asp His Ser Leu Ser Asp Thr Leu Gln Met His Phe Tyr
65 70 75 80

Glu Thr Cys Pro Tyr Leu Lys Phe Ala His Phe Thr Ala Asn Gln Ala
85 90 95

Ile Leu Glu Ala Phe Gln Gly Lys Lys Arg Val His Val Ile Asp Phe
100 105 110

Ser Met Ser Gln Gly Leu Gln Trp Pro Ala Leu Met Gln Ala Leu Ala
115 120 125

Leu Arg Pro Gly Gly Pro Pro Val Phe Arg Leu Thr Gly Ile Gly Pro
130 135 140

```
Pro Ala Pro Asp Asn Phe Asp Tyr Leu His Glu Val Gly Cys Lys Leu
145                 150                 155                 160

Ala His Leu Ala Glu Ala Ile His Val Glu Phe Glu Tyr Arg Gly Phe
                165                 170                 175

Val Ala Asn Thr Leu Ala Asp Leu Asp Ala Ser Met Leu Glu Leu Arg
            180                 185                 190

Pro Ser Glu Ile Glu Ser Val Ala Val Asn Ser Val Phe Glu Leu His
        195                 200                 205

Lys Leu Leu Gly Arg Pro Gly Ala Ile Asp Lys Val Leu Gly Val Val
    210                 215                 220

Asn Gln Ile Lys Pro Glu Ile Phe Thr Val Val Glu Gln Glu Ser Asn
225                 230                 235                 240

His Asn Ser Pro Ile Phe Leu Asp Arg Phe Thr Glu Ser Leu His Tyr
                245                 250                 255

Tyr Ser Thr Leu Phe Asp Ser Leu Glu Gly Val Pro Ser Gly Gln Asp
            260                 265                 270

Lys Val Met Ser Glu Val Tyr Leu Gly Lys Gln Ile Cys Asn Val Val
        275                 280                 285

Ala Cys Asp Gly Pro Asp Arg Val Glu Arg His Glu Thr Leu Ser Gln
    290                 295                 300

Trp Arg Asn Arg Phe Gly Ser Ala Gly Phe Ala Ala Ala His Ile Gly
305                 310                 315                 320

Ser Asn Ala Phe Lys Gln Ala Ser Met Leu Leu Ala Leu Phe Asn Gly
                325                 330                 335

Gly Glu Gly Tyr Arg Val Glu Glu Ser Asp Gly Cys Leu Met Leu Gly
            340                 345                 350

Trp His Thr Arg Pro Leu Ile Ala Thr Ser Ala Trp Lys Leu Ser Thr
        355                 360                 365

Asn
```

<210> 122
<211> 371
<212> PRT
<213> Arabidopsis thaliana

<400> 122

```
Asn Gly Val Arg Leu Val His Ala Leu Met Ala Cys Ala Glu Ala Ile
 1               5                  10                  15

Gln Gln Asn Asn Leu Thr Leu Ala Glu Ala Leu Val Lys Gln Ile Gly
            20                  25                  30
```

Cys Leu Ala Val Ser Gln Ala Gly Ala Met Arg Lys Val Ala Thr Tyr
35 40 45

Phe Ala Glu Ala Leu Ala Arg Arg Ile Tyr Arg Leu Ser Pro Pro Gln
50 55 60

Asn Gln Ile Asp His Cys Leu Ser Asp Thr Leu Gln Met His Phe Tyr
65 70 75 80

Glu Thr Cys Pro Tyr Leu Lys Phe Ala His Phe Thr Ala Asn Gln Ala
85 90 95

Ile Leu Glu Ala Phe Glu Gly Lys Lys Arg Val His Val Ile Asp Phe
100 105 110

Ser Met Asn Gln Gly Leu Gln Trp Pro Ala Leu Met Gln Ala Leu Ala
115 120 125

Leu Arg Glu Gly Gly Pro Pro Thr Phe Arg Leu Thr Gly Ile Gly Pro
130 135 140

Pro Ala Pro Asp Asn Ser Asp His Leu His Glu Val Gly Cys Lys Leu
145 150 155 160

Ala Gln Leu Ala Glu Ala Ile His Val Glu Phe Glu Tyr Arg Gly Phe
165 170 175

Val Ala Asn Ser Leu Ala Asp Leu Asp Ala Ser Met Leu Glu Leu Arg
180 185 190

Pro Ser Asp Thr Glu Ala Val Ala Val Asn Ser Val Phe Glu Leu His
195 200 205

Lys Leu Leu Gly Arg Pro Gly Gly Ile Glu Lys Val Leu Gly Val Val
210 215 220

Lys Gln Ile Lys Pro Val Ile Phe Thr Val Val Glu Gln Glu Ser Asn
225 230 235 240

His Asn Gly Pro Val Phe Leu Asp Arg Phe Thr Glu Ser Leu His Tyr
245 250 255

Tyr Ser Thr Leu Phe Asp Ser Leu Glu Gly Val Pro Asn Ser Gln Asp
260 265 270

Lys Val Met Ser Glu Val Tyr Leu Gly Lys Gln Ile Cys Asn Leu Val
275 280 285

Ala Cys Glu Gly Pro Asp Arg Val Glu Arg His Glu Thr Leu Ser Gln
290 295 300

Trp Gly Asn Arg Phe Gly Ser Ser Gly Leu Ala Pro Ala His Leu Gly
305 310 315 320

Ser Asn Ala Phe Lys Gln Ala Ser Met Leu Leu Ser Val Phe Asn Ser
325 330 335

Gly Gln Gly Tyr Arg Val Glu Glu Ser Asn Gly Cys Leu Met Leu Gly

340 345 350

Trp His Thr Arg Pro Leu Ile Thr Thr Ser Ala Trp Lys Leu Ser Thr
355 360 365

Ala Ala Tyr
370

<210> 123
<211> 364
<212> PRT
<213> Arabidopsis thaliana

<400> 123

Thr Gly Val Arg Leu Val His Ala Leu Leu Ala Cys Ala Glu Ala Val
1 5 10 15

Gln Gln Asn Asn Leu Lys Leu Ala Asp Ala Leu Val Lys His Val Gly
20 25 30

Leu Leu Ala Ser Ser Gln Ala Gly Ala Met Arg Lys Val Ala Thr Tyr
35 40 45

Phe Ala Glu Gly Leu Ala Arg Arg Ile Tyr Arg Ile Tyr Pro Arg Asp
50 55 60

Asp Val Ala Ser Ser Ser Phe Ser Asp Thr Leu Gln Ile His Phe Tyr
65 70 75 80

Glu Ser Cys Pro Tyr Leu Lys Phe Ala His Phe Thr Ala Asn Gln Ala
85 90 95

Ile Leu Glu Val Phe Ala Thr Ala Glu Lys Val His Val Ile Asp Leu
100 105 110

Gly Leu Asn His Gly Leu Gln Trp Pro Ala Leu Ile Gln Ala Leu Ala
115 120 125

Leu Arg Pro Asn Gly Pro Pro Asp Phe Arg Leu Thr Gly Ile Gly Tyr
130 135 140

Ser Leu Thr Asp Ile Gln Glu Val Gly Trp Lys Leu Gly Gln Leu Ala
145 150 155 160

Ser Thr Ile Gly Val Asn Phe Glu Phe Lys Ser Ile Ala Leu Asn Asn
165 170 175

Leu Ser Asp Leu Lys Pro Glu Met Leu Asp Ile Arg Pro Gly Leu Glu
180 185 190

Ser Val Ala Val Asn Ser Val Phe Glu Leu His Arg Leu Leu Ala His
195 200 205

Pro Gly Ser Ile Asp Lys Phe Leu Ser Thr Ile Lys Ser Ile Arg Pro
210 215 220

```
Asp Ile Met Thr Val Val Glu Gln Glu Ala Asn His Asn Gly Thr Val
225                 230                 235                 240

Phe Leu Asp Arg Phe Thr Glu Ser Leu His Tyr Tyr Ser Ser Leu Phe
                245                 250                 255


Asp Ser Leu Glu Gly Pro Pro Ser Gln Asp Arg Val Met Ser Glu Leu
            260                 265                 270

Phe Leu Gly Arg Gln Ile Leu Asn Leu Val Ala Cys Glu Gly Glu Asp
        275                 280                 285

Arg Val Glu Arg His Glu Thr Leu Asn Gln Trp Arg Asn Arg Phe Gly
    290                 295                 300

Leu Gly Gly Phe Lys Pro Val Ser Ile Gly Ser Asn Ala Tyr Lys Gln
305                 310                 315                 320

Ala Ser Met Leu Leu Ala Leu Tyr Ala Gly Ala Asp Gly Tyr Asn Val
                325                 330                 335

Glu Glu Asn Glu Gly Cys Leu Leu Leu Gly Trp Gln Thr Arg Pro Leu
            340                 345                 350

Ile Ala Thr Ser Ala Trp Arg Ile Asn Arg Val Glu
        355                 360


<210> 124
<211> 368
<212> PRT
<213> Arabidopsis thaliana

<400> 124

Glu Gly Leu His Leu Leu Thr Leu Leu Leu Gln Cys Ala Glu Ala Val
 1               5                  10                  15

Ser Ala Asp Asn Leu Glu Glu Ala Asn Lys Leu Leu Leu Glu Ile Ser
            20                  25                  30

Gln Leu Ser Thr Pro Tyr Gly Thr Ser Ala Gln Arg Val Ala Ala Tyr
        35                  40                  45

Phe Ser Glu Ala Met Ser Ala Arg Leu Leu Asn Ser Cys Leu Gly Ile
    50                  55                  60

Tyr Ala Ala Leu Pro Ser Arg Trp Met Pro Gln Thr His Ser Leu Lys
65                  70                  75                  80

Met Val Ser Ala Phe Gln Val Phe Asn Gly Ile Ser Pro Leu Val Lys
                85                  90                  95

Phe Ser His Phe Thr Ala Asn Gln Ala Ile Gln Glu Ala Phe Glu Lys
            100                 105                 110

Glu Asp Ser Val His Ile Ile Asp Leu Asp Ile Met Gln Gly Leu Gln
```

115 120 125

Trp Pro Gly Leu Phe His Ile Leu Ala Ser Arg Pro Gly Gly Pro Pro
130 135 140

His Val Arg Leu Thr Gly Leu Gly Thr Ser Met Glu Ala Leu Gln Ala
145 150 155 160

Thr Gly Lys Arg Leu Ser Asp Phe Ala Asp Lys Leu Gly Leu Pro Phe
165 170 175

Glu Phe Cys Pro Leu Ala Glu Lys Val Gly Asn Leu Asp Thr Glu Arg
180 185 190

Leu Asn Val Arg Lys Arg Glu Ala Val Ala Val His Trp Leu Gln His
195 200 205

Ser Leu Tyr Asp Val Thr Gly Ser Asp Ala His Thr Leu Trp Leu Leu
210 215 220

Gln Arg Leu Ala Pro Lys Val Val Thr Val Val Glu Gln Asp Leu Ser
225 230 235 240

His Ala Gly Ser Phe Leu Gly Arg Phe Val Glu Ala Ile His Tyr Tyr
245 250 255

Ser Ala Leu Phe Asp Ser Leu Gly Ala Ser Tyr Gly Glu Glu Ser Glu
260 265 270

Glu Arg His Val Val Glu Gln Gln Leu Leu Ser Lys Glu Ile Arg Asn
275 280 285

Val Leu Ala Val Gly Gly Pro Ser Arg Ser Gly Glu Val Lys Phe Glu
290 295 300

Ser Trp Arg Glu Lys Met Gln Gln Cys Gly Phe Lys Gly Ile Ser Leu
305 310 315 320

Ala Gly Asn Ala Ala Thr Gln Ala Thr Leu Leu Leu Gly Met Phe Pro
325 330 335

Ser Asp Gly Tyr Thr Leu Val Asp Asp Asn Gly Thr Leu Lys Leu Gly
340 345 350

Trp Lys Asp Leu Ser Leu Leu Thr Ala Ser Ala Trp Thr Pro Arg Ser
355 360 365

<210> 125
<211> 325
<212> PRT
<213> Arabidopsis thaliana

<400> 125

Ala Met Glu Gly Glu Lys Met Val His Val Ile Asp Leu Asp Ala Ser
1 5 10 15

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Glu Pro Ala Gln Trp Leu Ala Leu Leu Gln Ala Phe Asn Ser Arg Pro
            20                  25                  30

Glu Gly Pro Pro His Leu Arg Ile Thr Gly Val His His Gln Lys Glu
        35                  40                  45

Val Leu Glu Gln Met Ala His Arg Leu Ile Glu Glu Ala Glu Lys Leu
    50                  55                  60

Asp Ile Pro Phe Gln Phe Asn Pro Val Val Ser Arg Leu Asp Cys Leu
65                  70                  75                  80

Asn Val Glu Gln Leu Arg Val Lys Thr Gly Glu Ala Leu Ala Val Ser
                85                  90                  95

Ser Val Leu Gln Leu His Thr Phe Leu Ala Ser Asp Asp Asp Leu Met
            100                 105                 110

Arg Lys Asn Cys Ala Leu Arg Phe Gln Asn Asn Pro Ser Gly Val Asp
        115                 120                 125

Leu Gln Arg Val Leu Met Met Ser His Gly Ser Ala Ala Glu Ala Arg
    130                 135                 140

Glu Asn Asp Met Ser Asn Asn Asn Gly Tyr Ser Pro Ser Gly Asp Ser
145                 150                 155                 160

Ala Ser Ser Leu Pro Leu Pro Ser Ser Gly Arg Thr Asp Ser Phe Leu
                165                 170                 175

Asn Ala Ile Trp Gly Leu Ser Pro Lys Val Met Val Val Thr Glu Gln
            180                 185                 190

Asp Ser Asp His Asn Gly Ser Thr Leu Met Glu Arg Leu Leu Glu Ser
        195                 200                 205

Leu Tyr Thr Tyr Ala Ala Leu Phe Asp Cys Leu Glu Thr Lys Val Pro
    210                 215                 220

Arg Thr Ser Gln Asp Arg Ile Lys Val Glu Lys Met Leu Phe Gly Glu
225                 230                 235                 240

Glu Ile Lys Asn Ile Ile Ser Cys Glu Gly Phe Glu Arg Arg Glu Arg
                245                 250                 255

His Glu Lys Leu Glu Lys Trp Ser Gln Arg Ile Asp Leu Ala Gly Phe
            260                 265                 270

Gly Asn Val Pro Leu Ser Tyr Tyr Ala Met Leu Gln Ala Arg Arg Leu
        275                 280                 285

Leu Gln Gly Cys Gly Phe Asp Gly Tyr Arg Ile Lys Glu Glu Ser Gly
    290                 295                 300

Cys Ala Val Ile Cys Trp Gln Asp Arg Pro Leu Tyr Ser Val Ser Ala
305                 310                 315                 320

Trp Arg Cys Arg Lys
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325

<210> 126
<211> 248
<212> PRT
<213> Arabidopsis thaliana

<400> 126

Leu Ala Glu Phe Val Asp Leu Thr Pro Trp His Arg Phe Gly Phe Ile
1 5 10 15

Ala Ala Asn Ala Ala Ile Leu Asp Ala Val Glu Gly Tyr Ser Ser Val
20 25 30

His Ile Val Asp Leu Ser Leu Thr His Cys Met Gln Ile Pro Thr Leu
35 40 45

Ile Asp Ser Met Ala Asn Lys Leu His Lys Lys Pro Pro Pro Leu Leu
50 55 60

Lys Leu Thr Val Ile Ala Ser Asp Ala Glu Phe His Pro Pro Pro Leu
65 70 75 80

Leu Gly Ile Ser Tyr Glu Glu Leu Gly Ser Lys Leu Val Asn Phe Ala
85 90 95

Thr Thr Arg Asn Val Ala Met Glu Phe Arg Ile Ile Ser Ser Ser Tyr
100 105 110

Ser Asp Gly Leu Ser Ser Leu Ile Glu Gln Leu Arg Ile Asp Pro Phe
115 120 125

Val Phe Asn Glu Ala Leu Val Val Asn Cys His Met Met Leu His Tyr
130 135 140

Ile Pro Asp Glu Ile Leu Thr Ser Asn Leu Arg Ser Val Phe Leu Lys
145 150 155 160

Glu Leu Arg Asp Leu Asn Pro Thr Ile Val Thr Leu Ile Asp Glu Asp
165 170 175

Ser Asp Phe Thr Ser Thr Asn Val Glu Arg Leu Glu Pro Phe Thr Gly
180 185 190

Val Gly Phe Gly Glu Thr Ala Met Thr Glu Val Lys Thr Met Leu Glu
195 200 205

Glu His Ala Thr Gly Trp Gly Met Lys Lys Asp Val Asp Asp Asp Asn
210 215 220

Asp Val Glu Arg Phe Val Leu Thr Trp Lys Gly His Ser Val Met Phe
225 230 235 240

Ala Ser Ala Trp Ala Pro Pro Asn
245

<210> 127
<211> 284
<212> PRT
<213> Arabidopsis thaliana

<400> 127

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Ala Asn Val Glu Ile Leu Glu Ala Ile Ala Gly Glu Thr Arg Val His
 1               5                  10                  15

Ile Ile Asp Phe Gln Ile Ala Gln Gly Ser Gln Tyr Met Phe Leu Ile
            20                  25                  30

Gln Glu Leu Ala Lys Arg Pro Gly Gly Pro Pro Leu Leu Arg Val Thr
        35                  40                  45

Gly Val Asp Asp Ser Gln Ser Thr Tyr Ala Arg Gly Gly Gly Leu Ser
    50                  55                  60

Leu Val Gly Glu Arg Leu Ala Thr Leu Ala Gln Ser Cys Gly Val Pro
65                  70                  75                  80

Phe Glu Phe His Asp Ala Ile Met Ser Gly Cys Lys Val Gln Arg Glu
                85                  90                  95

His Leu Gly Leu Glu Pro Gly Phe Ala Val Val Val Asn Phe Pro Tyr
            100                 105                 110

Val Leu His His Met Pro Asp Glu Ser Val Ser Val Glu Lys Tyr Arg
        115                 120                 125

Asp Arg Leu Leu His Leu Ile Lys Ser Leu Ser Pro Lys Leu Val Thr
    130                 135                 140

Leu Val Glu Gln Glu Ser Asn Thr Asn Thr Ser Pro Leu Val Ser Arg
145                 150                 155                 160

Phe Val Glu Thr Leu Asp Tyr Tyr Thr Ala Met Phe Glu Ser Ile Asp
                165                 170                 175

Ala Ala Arg Pro Arg Asp Asp Lys Gln Arg Ile Ser Ala Glu Gln His
            180                 185                 190

Cys Val Ala Arg Asp Ile Val Asn Met Ile Ala Cys Glu Glu Ser Glu
        195                 200                 205

Arg Val Glu Arg His Glu Val Leu Gly Lys Trp Arg Val Arg Met Met
    210                 215                 220

Met Ala Gly Phe Thr Gly Trp Pro Val Ser Thr Ser Ala Ala Phe Ala
225                 230                 235                 240

Ala Ser Glu Met Leu Lys Ala Tyr Asp Lys Asn Tyr Lys Leu Gly Gly
                245                 250                 255

His Glu Gly Ala Leu Tyr Leu Phe Trp Lys Arg Arg Pro Met Ala Thr
            260                 265                 270
```

```
Cys Ser Val Trp Lys Pro Asn Pro Asn Tyr Ile Gly
        275                 280
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<210> 128
<211> 294
<212> PRT
<213> Arabidopsis thaliana

<400> 128

```
Met His Ile Leu Tyr Glu Ala Cys Pro Tyr Phe Lys Phe Gly Tyr Glu
 1               5                  10                  15

Ser Ala Asn Gly Ala Ile Ala Glu Ala Val Lys Asn Glu Ser Phe Val
            20                  25                  30

His Ile Ile Asp Phe Gln Ile Ser Gln Gly Gly Gln Trp Val Ser Leu
        35                  40                  45

Ile Arg Ala Leu Gly Ala Arg Pro Gly Gly Pro Pro Asn Val Arg Ile
    50                  55                  60

Thr Gly Ile Asp Asp Pro Arg Ser Ser Phe Ala Arg Gln Gly Gly Leu
65                  70                  75                  80

Glu Leu Val Gly Gln Arg Leu Gly Lys Leu Ala Glu Met Cys Gly Val
                85                  90                  95

Pro Phe Glu Phe His Gly Ala Ala Leu Cys Cys Thr Glu Val Glu Ile
            100                 105                 110

Glu Lys Leu Gly Val Arg Asn Gly Glu Ala Leu Ala Val Asn Phe Pro
        115                 120                 125

Leu Val Leu His His Met Pro Asp Glu Ser Val Thr Val Glu Asn His
    130                 135                 140

Arg Asp Arg Leu Leu Arg Leu Val Lys His Leu Ser Pro Asn Val Val
145                 150                 155                 160

Thr Leu Val Glu Gln Glu Ala Asn Thr Asn Thr Ala Pro Phe Leu Pro
                165                 170                 175

Arg Phe Val Glu Thr Met Asn His Tyr Leu Ala Val Phe Glu Ser Ile
            180                 185                 190

Asp Val Lys Leu Ala Arg Asp His Lys Glu Arg Ile Asn Val Glu Gln
        195                 200                 205

His Cys Leu Ala Arg Glu Val Val Asn Leu Ile Ala Cys Glu Gly Val
    210                 215                 220

Glu Arg Glu Glu Arg His Glu Pro Leu Gly Lys Trp Arg Ser Arg Phe
225                 230                 235                 240

His Met Ala Gly Phe Lys Pro Tyr Pro Leu Ser Ser Tyr Val Asn Ala
                245                 250                 255
```

```
Thr Ile Lys Gly Leu Leu Glu Ser Tyr Ser Glu Lys Tyr Thr Leu Glu
            260                 265                 270

Glu Arg Asp Gly Ala Leu Tyr Leu Gly Trp Lys Asn Gln Pro Leu Ile
        275                 280                 285

Thr Ser Cys Ala Trp Arg
    290
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<210> 129
<211> 205
<212> PRT
<213> Arabidopsis thaliana

<400> 129

```
Lys Lys Trp Glu Thr Ile Thr Leu Asp Glu Leu Met Ile Asn Pro Gly
 1               5                  10                  15

Glu Thr Thr Val Val Asn Cys Ile His Arg Leu Gln Tyr Thr Pro Asp
            20                  25                  30

Glu Thr Val Ser Leu Asp Ser Pro Arg Asp Thr Val Leu Lys Leu Phe
        35                  40                  45

Arg Asp Ile Asn Pro Asp Leu Phe Val Phe Ala Glu Ile Asn Gly Met
    50                  55                  60

Tyr Asn Ser Pro Phe Phe Met Thr Arg Phe Arg Glu Ala Leu Phe His
65                  70                  75                  80

Tyr Ser Ser Leu Phe Asp Met Phe Asp Thr Thr Ile His Ala Glu Asp
                85                  90                  95

Glu Tyr Lys Asn Arg Ser Leu Leu Glu Arg Glu Leu Leu Val Arg Asp
            100                 105                 110

Ala Met Ser Val Ile Ser Cys Glu Gly Ala Glu Arg Phe Ala Arg Pro
        115                 120                 125

Glu Thr Tyr Lys Gln Trp Arg Val Arg Ile Leu Arg Ala Gly Phe Lys
    130                 135                 140

Pro Ala Thr Ile Ser Lys Gln Ile Met Lys Glu Ala Lys Glu Ile Val
145                 150                 155                 160

Arg Lys Arg Tyr His Arg Asp Phe Val Ile Asp Ser Asp Asn Asn Trp
                165                 170                 175

Met Leu Gln Gly Trp Lys Gly Arg Val Ile Tyr Ala Phe Ser Cys Trp
            180                 185                 190

Lys Pro Ala Glu Lys Phe Thr Asn Asn Asn Leu Asn Ile
        195                 200                 205
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<210> 130

<211> 158
<212> PRT
<213> Arabidopsis thaliana

<400> 130

Pro Asp Pro Val Gln Ser Asn Lys Leu Leu Asn Thr Val Lys Ala Ile
 1   5   10   15

Lys Pro Ser Ile Val Thr Val Val Glu Gln Glu Ala Asn His Asn Gly
            20   25   30

Ile Val Phe Leu Asp Arg Phe Asn Glu Ala Leu His Tyr Tyr Ser Ser
        35   40   45

Leu Phe Asp Ser Leu Glu Asp Ser Tyr Ser Leu Pro Ser Gln Asp Arg
    50   55   60

Val Met Ser Glu Val Tyr Leu Gly Arg Gln Ile Leu Asn Val Val Ala
65   70   75   80

Ala Glu Gly Ser Asp Arg Val Glu Arg His Glu Thr Ala Ala Gln Trp
                85   90   95

Arg Ile Arg Met Lys Ser Ala Gly Phe Asp Pro Ile His Leu Gly Ser
            100   105   110

Ser Ala Phe Lys Gln Ala Ser Met Leu Leu Ser Leu Tyr Ala Thr Gly
        115   120   125

Asp Gly Tyr Arg Val Glu Glu Asn Asp Gly Cys Leu Met Ile Gly Trp
    130   135   140

Gln Thr Arg Pro Leu Ile Thr Thr Ser Ala Trp Lys Leu Ala
145   150   155

<210> 131
<211> 112
<212> PRT
<213> Arabidopsis thaliana

<400> 131

Ser Leu Glu Pro Asn Leu Asp Arg Asp Ser Lys Glu Arg Leu Arg Val
 1   5   10   15

Glu Arg Val Leu Phe Gly Arg Arg Ile Met Asp Leu Val Arg Ser Asp
            20   25   30

Asp Asp Asn Asn Lys Pro Gly Thr Arg Phe Gly Leu Met Glu Glu Lys
        35   40   45

Glu Gln Trp Arg Val Leu Met Glu Lys Ala Gly Phe Glu Pro Val Lys
    50   55   60

Pro Ser Asn Tyr Ala Val Ser Gln Ala Lys Leu Leu Leu Trp Asn Tyr

65 70 75 80

Asn Tyr Ser Thr Leu Tyr Ser Leu Val Glu Ser Glu Pro Gly Phe Ile
85 90 95

Ser Leu Ala Trp Asn Asn Val Pro Leu Leu Thr Val Ser Ser Trp Arg
100 105 110

<210> 132
<211> 77
<212> PRT
<213> Arabidopsis thaliana

<400> 132

Ser Ser Val Leu Gln Leu His Thr Phe Leu Ala Ser Asp Asp Asp Leu
1 5 10 15

Met Arg Lys Asn Cys Ala Leu Arg Phe His Asn Asn Pro Ser Gly Val
20 25 30

Asp Leu Gln Arg Val Leu Met Met Ser His Gly Ser Ala Ala Glu Ala
35 40 45

Arg Glu Asn Asp Met Ser Asn Asn Asn Gly Tyr Ser Pro Ser Gly Asp
50 55 60

Ser Ala Ser Ser Leu Pro Leu Pro Ser Ser Gly Arg Thr
65 70 75

<210> 133
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<220>
<223> primer

<221> modified_base
<222> 9, 12
<223> n=i

<221> modified_base
<222> 21
<223> n=a, c, g, or t

<400> 133

cayttyacng cnaaycargc nat 23

<210> 134
<211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> sequence 133 amino acid

<400> 134

His Phe Thr Ala Asn Gln Ala Ile
 1   5

<210> 135
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<221> modified_base
<222> 12
<223> n=i

<221> modified_base
<222> 27
<223> n=a, c, g, or t

<400> 135

acgtctcgag tncayathat hgayttnga 29

<210> 136
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> sequence 135 amino acid

<221> SITE
<222> (6)
<223> Xaa=Leu or Phe

<400> 136

Val His Ile Ile Asp Xaa Asp
 1   5

<210> 137
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<221> modified_base
<222> 3,12
<223> n=i

<221> modified_base
<222> 18
<223> n=a, c, g, or t

<400> 137

ytncartgyg cngargcngt 20

<210> 138
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> sequence 137 amino acid

<400> 138

Leu Gln Cys Ala Glu Ala Val
1 5

<210> 139
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<221> modified_base
<222> 12,15
<223> n=i

<221> modified_base
<222> 18,21
<223> n=a, c, g, or t

<400> 139

ckccmgtktg gnggnccncc ngg 23

<210> 140
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> sequence 139 amino acid

<221> SITE
<222> 6
<223> Xaa=His, Asn or Lys

<221> SITE
<222> 7
<223> Xaa=Val, Leu or Phe

<400> 140

Pro Gly Gly Pro Pro Xaa Xaa Arg
 1   5

<210> 141
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<221> modified_base
<222> 3,12
<223> n=i
<221> modified_base
<222> 21
<223> n=a, c, g, or t

<400> 141

atnccrttra anacytgraa ngc   23

<210> 142
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> sequence 141 amino acid

<400> 142

Ala Phe Gln Val Phe Asn Gly Ile
 1   5

<210> 143
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<221> modified_base
<222> 9,15
<223> n=i

<221> modified_base
<222> 12
<223> n=a, c, g, or t

<400> 143

atrtgraana rnccnggcca ytg 23

<210> 144
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> sequence 143 amino acid

<400> 144

Gln Trp Pro Gly Leu Phe His Ile
1 5